



INDRAPRASTHA INSTITUTE *of*  
INFORMATION TECHNOLOGY **DELHI**



**2015 - 16**  
**ANNUAL REPORT**



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## Executive Summary

With the fifth graduating batch, this is a historic and proud moment for IIIT-Delhi. We have continued to provide high-quality education, promote research and entrepreneurship advancements, and build programmes to help the sections of society. Faculty, students, alumni, and staff are assiduously working hard to make IIIT-Delhi a top tier institution in India.

“Education is a journey, not a destination” - a famous and enduring quote which is the core of IIIT-Delhi. With this year’s admission, IIIT-Delhi strives to facilitate a delightful journey to over 1137 students, including 781 BTech, 230 MTech, and 126 PhD students. In the 4<sup>th</sup> Convocation, we conferred 4 PhD, 109 B.Tech, 4 Dual and 102 M.Tech degrees.

The backbone of IIIT-Delhi is its faculty, current strength is 39, all of whom hold PhD degrees from prestigious institutions from across the world. In addition, we have 9 visiting faculty, who augment our regular faculty. With the help of our faculty, cutting-edge curriculum, teaching innovations, and diversity of courses, we help the students to attain **world class education** at the institute.

We have also introduced a 3<sup>rd</sup> UG programme after CSE and ECE, “**BTech programme in Computer Science and Applied Mathematics (CSAM)**”. The program aims to produce graduates with computational skills as well as the ability to use sophisticated mathematical concepts and tools in order to approach problems.

In pursuing our goal of becoming top tier institution, **research** is the main emphasis. Faculty and research scholars are engaged in innovative research on forefront technologies. Last year, 152 research papers are published, including 24 journal papers, 117 conference papers, 11 workshop papers, and 7 book/ book chapters. Our faculty was invited to more than 102 national and international seminars as speaker or guest. Like previous years, this year too our faculty continues to receive several awards including best paper award in conferences, NVIDIA Innovation Award, and the prestigious DeitY young faculty fellowship. Moreover, this year 16 research proposals from our faculty were approved for funding by various agencies for a total commitment of ₹ 4.7 crores.

In the current ecosystem, **collaboration** is the key to success in research and innovation. Our faculty members were involved in collaborations with 62 external collaborators, across the world. Of these, 15 are with industry, 35 with universities and/or faculty from other universities and 12 are with research labs.

Within seven years of our PhD programme, we crossed a figure of **100 PhD students** who have continued to excel in research and published their research papers in prestigious conference and journals, jointly with their thesis advisors and collaborators. Our PhD students have also received several prestigious fellowships: 1 TCS PhD Fellowship, 14 Visvesvaraya PhD Fellowships, 1 UGC Fellowship, and 12 Institute scholarships.

Another milestone we have attained is the establishment of **Infosys Center for Artificial Intelligence (CAI)**. Infosys Foundation has given IIIT-Delhi a multi-million dollar grant to establish the center and it was inaugurated by Mr. Pravin Rao, Chief Operating Officer of Infosys on April 4, 2016. This is one of the largest industry-supported research centers in an academic institution in the country. Through this grant, IIIT-Delhi has been given the responsibility of conducting breakthrough research in the field of Artificial Intelligence Technology.

In our R&D efforts, we remain committed to **entrepreneurial advancements** and developing technologies that can be transferred for commercial implementation or use by other organizations. This year, 10 new technologies and tools were developed which were transferred to various organisations. Five start-ups based on technologies and tools developed at IIIT-Delhi have emerged so far.

With the success of the brand ambassadors, **the alumni**, IIIT-Delhi is poised to become one of the most sought institutions in India. Many of our alumni are running their own companies or start-ups, contributing in established companies and research labs, or pursuing higher education in reputed institutions across the globe. There are good signs of building a strong and committed alumni network which can significantly contribute to the growth of the institute.

IIIT-Delhi’s **Library and Information Center** has initiated a project to host a collection of books on computing written by India-based authors since the start of Computer Science education in India in the 1960s. The collection can become a unique resource for researchers working on the history of computing education in

India. Right now we have 100 titles in the collection and counting. The current collection can be seen at the library portal as well.

This year, we have received **NBA accreditation** for our B.Tech (CSE) programme valid for 5 years. Earlier, we had received the UGC 12B and NAAC 'A' Level accreditations. The Institute has also received funding of Rs 1.5 Crores from Delhi Government as per its incubation policy to promote entrepreneurship in the Capital.

IIIT-Delhi has been recognized by **SBI and PNB for its education loan scheme**. We are the first institute among IIITs to get this privilege. The scheme entitles a student of the Institute to an education loan of up to ₹ 20 Lakh without any collateral. The rate of interest is 0.65% above base rate (presently 9.95% p.a.). Further concession of 0.25% is available for the collateral security or work experience of 2 years.

Due to our rapid growth, the current buildings are fully utilized, with limited scope to grow further. For further growth in student and faculty strength as well as bolstering our infrastructure, construction for the **phase-II of the campus** will be completed between June 2017 and December 2017. This will add another 70,000 sq. meters of building space, approximately two times the current area.

With respect to **placements**, this year again we kept up with our previous years' strong performance with placement in top companies such as Microsoft, Xerox Research, Amazon, Adobe, and EMC. By most measures for placement

- highest domestic salary offered, the percentage of students placed, mean and median offers
- we are probably amongst the top few in our peer group.

As we all look forward to IIIT-Delhi's continued advancement and progress, we believe that we need to strengthen our academic mission of high-quality research and education, focusing on student success, and our contributions to advance our community's social development. Though many challenges remain, we are confident of addressing them in the coming years with the support of students, faculty, administration, and well-wishers.



**About Us**



## About Us

### Establishment and History

Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi) was created as a State University by an Act of Delhi Government (The IIIT Delhi Act, 2007) empowering it to do research and development and grant degrees. IIIT-Delhi was officially established in June 2008 and started its academic programmes in the same year with its first batch of 60 B.Tech students.

Since then, it has come a long way, with 48 faculty members specializing in diverse areas of Computer Science, Electronics, Mathematics, Computational Biology & Communications Engineering; it has earned a good reputation in India and abroad for being a center of quality education and research in IT and allied areas.

IIIT-Delhi is an autonomous Institute, with the Board (current Chairman: Mr. Kiran Karnik) fully authorized to take all important decisions, including student intake and fee structure. The Board is supported by the Academic Senate of the Institute, which is empowered to make all academic policies, and which advises the Board on starting new academic programmes.



## Our Mission and Vision

The Institute's stated **mission** is to be a global center of excellence in Information Technology education, training, and research. Its twin aims are:

- To carry out advanced research and development in information and software technologies, and in leveraging IT in specific domain areas.
- To train and educate, at both undergraduate and postgraduate levels, engineers of outstanding ability who can become innovators and new product creators.

It aims to encourage innovation and entrepreneurship in specified domain areas of IT. Towards this end, it plans to organise itself as a conglomerate or R&D centers, some of which would be a partnership with different companies and global organisation. All centers will also be engaged in teaching and thesis guidance. These centers, with various labs, will be the hub of activity, with active contribution from faculty and students.

The **vision** of the Institute is to be a world-class R&D-led institute of higher education in IT and allied areas which:

- Is globally respected for research and education
- Has thriving UG and PG education programmes
- Is socially relevant, industry-facing, globally linked



## Campus Infrastructure

The Institute's permanent campus in Okhla became operational in August 2012, before which it was functioning from NSIT, Dwarka. The campus is built on 25 acres of land which is located behind the phase III Okhla Industrial Estate. The Institute currently has a built up area of 32000 sq. meters including lecture halls, classrooms, research labs, instruction labs, boys' hostel, girls' hostel, dining and student center, space for student clubs, etc. It also has a general purpose playing field, tennis courts, basketball court, volleyball court, etc.

Construction of Phase II of the campus has already started. Mr. Manish Sisodia, Deputy Chief Minister of Delhi, laid the foundation stone for the second phase of the campus on 5 May 2015, Phase II will include construction of a new academic block, an auditorium, and research centers. When complete, the institute will be able to increase enrollment to 1600 and nearly half of those can be accommodated in the student residences. Currently spread over an area of 33,000sqm, the new construction will add 74,000sqm more space. The construction is likely to be complete by next year. In our campus, we continue to focus on effective resource utilization and have installed smart electricity meters which show energy usage in a dashboard. Last year, we installed solar panels of 40KW capacity, which generate about 4K units of power every month. While our cost savings are small, this helps us contribute to the environment, and also reduce our energy requirement from the grid, making it available for other uses. There are two functioning STPs through which the Institute recycles all its waste water and uses it for irrigation.

The Institute has a campus-wide computer network with a redundant 10-gigabit fiber backbone, 1 GBPS bandwidth, and a data Centre with 40 servers and 45TB storage, LAN or Wi-Fi access throughout the campus including hostels, classrooms, and residences. All classrooms are equipped with multimedia capability, including projectors and audio systems.

The Library and Information Center of the Institute has books in various disciplines and subscribes to many major Digital Libraries including ACM, Elsevier, IEEE, Springer, etc. It also subscribes to tools like Ephorus, IThenticate, Turnitin. It supports interlibrary loan and document delivery service and has many Kindle readers which students can take on loan for accessing online e-books and other e-resources.



## Research Centres

**Infosys Center for Artificial Intelligence:** The inauguration was done on April 4, 2016, by Mr. Pravin Rao, Chief Operating Officer of Infosys. Center for AI aims to be the premier center in India for the development of AI. This includes both the fundamental algorithms in AI to further basic research and also the application of AI for solving societal problems specifically in the Indian context.

**Cybersecurity Education and Research Centre:** CERC completed two years on 23rd Jan 2016. This year one of our biggest accomplishment was to become part of the Information Security Education and Awareness (ISEA) program, Phase II. This is a Government of India initiative with about 50+ institutes involved and a total budget of close to 100 crores rupees for 5 years. Centre plans to use this project as a vehicle to make some long lasting and useful contributions to the Indian Information Security ecosystem. This year, one Ph.D. student, three Masters Students, and many undergraduates passed out from the center.



**CCB@IIID**  
CENTER FOR COMPUTATIONAL  
BIOLOGY

**Centre for Computational Biology:** The center for computational biology (CCB) has completed its first year. In this one year, the center has grown in terms of faculty strength, with 5 core faculty and 6 adjunct/ visiting faculty, and also in terms of expertise in the areas of systems biology and bioinformatics/ biostatistics. The center has established M. Tech and PhD programmes in computational biology. It is also expected that the center's research in systems biology will address fundamental questions in biology employing rigorous approaches. In addition, the center will work on biological problems that have been difficult to solve purely by bioinformatics/ biostatistics or by systems biology approaches but demand integration of bioinformatics/ biostatistics with mechanistic modeling of the underlying biology. The center, with its research strength in some of the key areas of computational biology, is well positioned to facilitate such an epigamia.



## Leadership

### General Council

The General Council is the apex body of the Institute, chaired by Hon'ble Lt. Governor of Delhi. The current members of the General Council are:



**Mr. Najeeb Jung**

Hon'ble Chancellor of the Institute

#### **Other Members:**

- Mr. Kiran Karnik, Chairman BOG-IIIT-Delhi
- Ms, Neeta Verma, DG NIC
- Prof. Ashutosh Sharma, Secretary(DST)
- Prof Pankaj Jalote, Director, IIIT-Delhi
- Ms. Punya Salila Srivastava, Secretary(TTE)
- Mr. R Chandrashekhar, President, NASSCOM
- Ms. Aruna Sundararajan, Secretary, DeITy
- Dr. S Christopher, Head DRDO
- Mr. S.N.Sahai, Principal Secretary (Finance)

## Board of Governors

The Board is the main policy and decision-making body of the Institute. The current members of the Board are:



Mr. Kiran Karnik,  
Chairman,  
Ex-President NASSCOM



Prof. Dinesh Singh,  
Former Vice Chancellor of  
University of Delhi



Dr. Anand Deshpande,  
Founder,  
Chairman & MD, Persistent Systems



Prof. Pankaj Jalote,  
Director,  
IIIT-Delhi



Mr. Arvind Singhal,  
founder Technopak



Ms. Indira Parikh,  
Former Founder President of  
FLAME



Mr. S D Shibulal,  
Co-Founder,  
Infosys and Axilor Ventures



Ms. Punya Salila Shrivastava,  
Secretary (TTE)



Mr. Praveer Sinha,  
Chief Executive Officer &  
Executive Director of Tata Power Delhi  
Distribution Limited



Mr. S N Sahai,  
Principal Secretary (Finance)





**Education**



## Education

### Current Academic Programmes

The Institute offers undergraduate programmes in three areas leading to B.Tech degrees in CSE, ECE, and CSAM(Computer Science and Applied Mathematics); M.Tech in CSE/ECE/CB, and specialized M.Tech degrees in Mobile Computing, Information Security, Data Engineering, VLSI & Embedded Systems, Communication & Signal Processing and Computational Biology; as well as Doctoral programmes in Computer Science, Electronics & Communication, Computational Biology and Mathematics. The primary objective is to impart specialized training on the latest technological advancements in CSE and ECE domains.

## Total student strength

Details of Students Strength				
Level	Course	Batch	Student Strength	Total Students on Roll
<b>B.Tech</b>	CSE	2011	1	
	CSE	2012	9	
	ECE	2012	2	
	CSE	2013	116	
	ECE	2013	34	
	CSE	2014	123	
	ECE	2014	33	
	CSE	2015	130	
	ECE	2015	58	
	CSE	2016	122	
	ECE	2016	87	
	CSAM	2016	66	
<b>Total No. of B.Tech Students on Roll:</b>				<b>781</b>
<b>M.Tech</b>	CSE	2014	10	
	ECE	2014	6	
	CSE	2015	60	
	ECE	2015	36	
	CB	2015	10	
	CSE	2016	61	
	ECE	2016	39	
	CB	2016	9	
<b>Dual Degree</b>	ECE	2015	1	
<b>Total No. of M.Tech Students on Roll:</b>				<b>232</b>
<b>PhD</b>	CSE	2010	5	
	CSE	2011	9	
	CSE	2012	14	
	ECE	2012	2	
	CSE	2013	15	
	ECE	2013	8	
	CSE	2014	7	
	ECE	2014	9	
	CB	2014	1	
	CSE	2015	18	
	ECE	2015	12	
	CB	2015	3	
	CSE	2016	6	
	ECE	2016	15	
	CB	2016	0	
	MATHS	2016	2	
<b>Total No. of PhD Students on Roll</b>				<b>126</b>
<b>Total No. Students on Roll:</b>				<b>1139</b>



### Fourth Convocation

The Institute conducted its 4<sup>th</sup> convocation on September 4, 2015, at its campus in Okhla. A total of 4 PhD, 109 B.Tech, 4 Dual Degree and 102 M.Tech degrees were awarded to the graduating students in the presence of Ms. Aruna Jayanthi, CEO, Capgemini India, Shri Kiran Karnik, the Chairman of the institute's Board of Governors; and Prof. Pankaj Jalote, Director, IIIT-Delhi.

### Overall graduation data:

Programmes	Current Year	Total Passed till now
Btech(CSE)	126	425
Btech(ECE)	37	37
Mtech(CSE)	46	222
Mtech(ECE)	33	82
PhD	2	8
Dual Degree	3	9
<b>Total Graduated Students</b>	<b>247</b>	<b>783</b>

### Courses Taught

During the past year, a variety of courses were offered to students both at UG and PG level. Summary of courses:

	No. of Courses in Monsoon Semester	Average Enrollment in Monsoon Semester	No. of Courses in Winter Semester	Average Enrollment in Winter Semester
CSE	28	64	19	72
ECE	17	27	16	34
CSE+ECE	3	73	3	18
Others	19	59	28	63

## Scholarship and Assistantship to B.Tech. Students

Batch	No. of students who got 25% waiver	No. of students who got 50% waiver	BPL 100% waiver
BTech 2012	3	2	
BTech 2013	6	2	
B.Tech 2014	8	10	3
B.Tech 2015	5	15*	1

\*including 6 merit based

## M.Tech. Students

Fellowship Head	2015-16 Batch	2014 -15 Batch
GATE Scholarship ECE	36	37
GATE Scholarship CSE	69	52
GATE Scholarship CB	9	
<b>Total</b>	<b>114</b>	<b>89</b>

## PhD Students

Fellowship Head	2016 batch	2015 batch	2014 batch	2013 batch	2012 batch	2011 batch	2010 batch	Total
Visvesvaraya	1	15	9					25
Institute	15	11	2	5	5	1		39
TCS		1	2	9	5	6		23
CSIR	3			1				4
UGC		1		1				2
PM fellowship				1	1			2
Project	4	2	4	3	2	1		16
IBM				1				1
Sponsored		3		2	3	1		9
In 6th year or above							5	5
<b>Total</b>	<b>23</b>	<b>33</b>	<b>17</b>	<b>23</b>	<b>16</b>	<b>9</b>	<b>5</b>	<b>126</b>

## Academic Research and Publications

We continue to encourage our faculty and students to publish their work in top quality international avenues. The list of papers published last year until April 2016 is 24 in national and international journals, 117 in national and international refereed conferences, 11 as workshop papers and 7 as books / book chapters. The detailed list of publications is given in **Appendix A**.

## Technologies and tools developed and deployed

The Institute remains committed to developing technologies that can be transferred for commercial exploitation or use by other organizations. This year, out of many technologies developed at the institute, 10 new technologies reached the next level. One of them was Swarath, which is an autonomous E-Rikshaw and IIIT-Delhi's entry into the autonomous car competition by Mahindra.

Few of them are technologies which are deployed to the organizations like Overcart and DRDO. The list of technologies & tools developed & deployed is given as an **Appendix B1**.

## Patents

This year our faculty filed for 11 patents, out of which 3 were granted and 8 are still in the process. 5 patents were filed in India whereas 6 were filed in the US. The patents include inventions like "A device and system for biometric template protection", "A novel system and method for person identification and personality assessment based on EEG signal" and many more which are mentioned in **Appendix B2** in detail.



**Innovations, Research and  
Development**



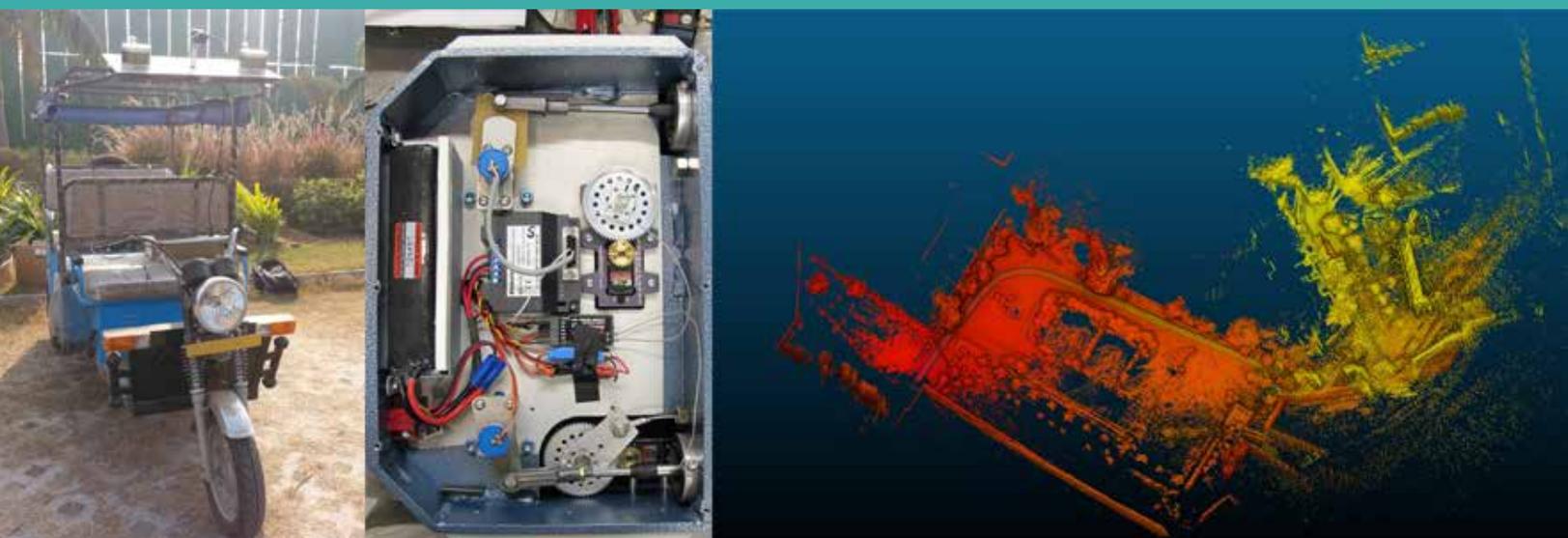
## Innovations, Research and Development

### Sponsored Research Projects

The list of projects that were sanctioned last year is given in **Appendix C**. The summary of the projects approved last year by different funding agencies is given below:

### New Projects:

Funding Agency	No. of Projects	Project Value(₹ Lakh)
DST-Science Engineering and Research	1	51.00
Google	1	09.50
Intelligence Bureau(IB)-Ministry of Home	1	6.36
DST Inspire	1	35.00
UGC	1	12.39
Yale University	1	11.47
CARS: DRDO	2	18.60
EMC Data Storage System India Pvt. Ltd	1	09.60
CDAC	1	36.06
DeitY	1	168.70
Irisys	1	12.65
IBM	1	00.90
DST-Fist	1	100.00
<b>Total</b>	<b>14</b>	<b>478.23</b>



### Ongoing Projects:

Project Title	Number of Projects	Value of the project(₹ lakh)
DST/Inspire	6	210.00
Use of cell phone for detecting and controlling infectious diseases	1	9.86
Smartphone-Based Anomalous Human Activity Detection & Prediction	1	19.84
Dynamical Analysis on the Functional relationship between circadian rhythms & memory formation to understand post-traumatic memories in human	1	15.89
StandFord University "Fractions to Millions"	1	7.91
EMC: Development of distributed algorithms for incremental Sensing Communication	1	9.60
Human Sense: Towards context aware sensing, inference and actuation for applications in Energy and Healthcare	1	184.41
Adobe Award	1	5.00
Networking of Researchers for a High Level Multi-Organisational & Cross-Border Collaboration - Network of Excellence	1	3.63
Nokia Lokalization	1	11.52
Nokia Health	1	6.31
Multimodal Context Switching Using Multispectral Face, Periocular and Iris Recognition at a Distance	1	120.55
Small Cell WiFi Networks For The Enterprise	1	88.34
Design Innovation Centre	1	130.00

<b>Project Title</b>	<b>Number of Projects</b>	<b>Value of the project(₹ lakh)</b>
DST-INRIA programme	1	5.14
AUV object Detection and identification using Sonar	1	12.90
Design and Development of Leukoanalyzer	1	28.31
Design and development of Digital Multimedia Forgery Detection system	1	49.80
A low cost and easy to use cuff-less blood pressure measuring device using pulse transit time and projection period	1	40.94
Creating Course Content for Privacy and Security in Online Social Media	1	12.19
Mobile-based Diagnosis of Sleep Apnea	1	51.01
Google Award for School	1	9.50
Using Online Social Media for Intelligence Gathering	1	6.36
Green Communication Technology for Multi Standard and Multi-band transceivers	1	12.39
Preventing & Treating HIV Comorbidities in India: Multi-Tiered Strategy For Women	1	11.47
Formulation of Modelling Strategy Of SSPL GAN-HEMT based on Non -Linear measurement data	1	9.60
Joint Research between EMC & IIIT-Delhi	1	9.60
Mechanism, Impact and Scenario Analysis	1	9.00
ISEA Project Phase-II	1	36.06
Integrating open sources intelligence from traditional sources and online social networks for Intelligence gathering	1	168.70
SRP-Irisys Company Ltd	1	11.67
IBM	1	00.90
Low cost high resolution cadastral map generation using UAV (Phase-1)	1	12.70
<b>Total</b>		<b>1321.10</b>



### Consultancy Projects

Funding Agency	No. of Projects	Project Value (₹ lakh)
Central Board Exise & Customs	1	10.00
Indian Oil Corporation	1	2.50
IEEE	3	10.42
VMware	1	1.00
Irisys Company Ltd	1	4.43
SPMCL	1	2.50
Kritical Solutions	1	4.20
<b>Total</b>	<b>9</b>	<b>35.05</b>

### Other Sponsorships

Funding Agency	No. of Students	Amount (₹ lakh)
Visvesvaraya (for 1st & 2nd Year)	23	93.84
TCS (for 1st & 2nd Year)	8	28.88
TCS (for 3rd & 4th Year)	15	61.35
CSIR (for 1st & 2nd Year)	1	3.12
CSIR (for 3rd , 4th & 5th year)	1	3.56
UGC (for 1st & 2nd Year)	2	6.24
<b>Total</b>		<b>196.99</b>

The Institute has an exceptional reputation for its external collaborations. Strong working relationships with a wide range of professionals, Universities, research councils and policy makers ensure that we have up-to-date and relevant course structure.

We run a wide range of highly successful initiatives, including contract research, in-house training, consultancy, and conferences. Sharing this expertise, we have formed strong working relationships with academic and non-academic organisations.



## External Collaborations

### Institute's Collaborations

#### Indo-Korea Collaboration:

Indraprastha Institute of Information Technology Delhi (IIIT-Delhi) has set up an R&D lab in collaboration with IRISYS Co. Ltd, a company from South Korea working in the area of biometric security. This is the first time any Korean company has set up a research lab in an academic institution in India. The lab was inaugurated by Mr. Hyun Cho, Ambassador of the Republic of Korea, in the presence of several CEOs of Korean companies, faculty members and students of IIIT-Delhi.



Mr. Ted Huntae Kim, CEO of Optimede, also signed an MoU with IIIT-Delhi for setting up of another R&D Lab in near future. Optimede is a Korean company building disposable low-cost medical imaging devices. Several other companies, as well as academic institutions, have expressed interest in collaborating with IIIT-Delhi on this occasion.

### Infosys Grant for Center for Artificial Intelligence:

Infosys Foundation (the philanthropic arm of Infosys) provided IIIT-Delhi a 24 Crore Rupee, three-year corpus grant to establish the Infosys Center for Artificial Intelligence at IIIT Delhi campus. Mr. Pravin Rao, Chief Operating Officer of Infosys, inaugurated the Infosys Center for Artificial Intelligence and also unveiled the website of the center. This is one of the largest endowments that industry has provided to academia for research in India.



This was possible due to our extensive achievements: IIIT-Delhi has one of the best PhD programmes in the country and has attracted the best faculty from top institutions in India and abroad. The center has started to work on three very interesting projects: 'I am Kalam', a project to create a virtual persona of Dr. Kalam; 'Swarath', a project towards creating an autonomous shuttle for the urban Indian; and 'Aurora', an intelligent UAV platform with capabilities such as autonomous flying, navigation, and landing etc.

### Association with University of Florida:

The Institute signed a cooperative agreement with the University of Florida. The primary objective of this agreement is the development of cooperative efforts between University of Florida and IIIT-Delhi which will enhance the academic and research interchange between the two institutions. Both organisations agreed to promote exchange between the faculty and students of the two institutions as well as exchange of academic and research information. Under this agreement, 3 BTech students of IIIT-Delhi spent a semester in Florida University from Jan 2016-June 2016. The credits completed by the students in Florida will count towards the overall BTech requirements.

### Ulsan National Institute Of Science, Republic of Korea (UNIST)

IIIT-Delhi has signed an MOU with UNIST, for a period of five years to promote academic cooperation between both the institutes, in the mutual areas of interest by means of exchange of faculty and students, joint development of research projects, joint supervision of PhD students, Joint organization of scientific and academic lectures, activities, conferences etc. and interchange of information or academic publications for common interest.

### Universidade de de Sao Paulo (USP), Brazil

We have signed an MOU with USP, to promote academic cooperation between both institutions, in the mutual areas of interest, by means of: exchange of teaching staff and researchers; joint development of research projects; joint organization of scientific and cultural events; interchange of information and of academic publications; exchange of students; exchange of members of their technical and administrative staffs; shared courses and subjects.

### Faculty Collaborations

Our faculty has been collaborating with colleagues in other institutions in the country, as well as institutions across the world. Last year, about 20 faculty members were involved in external collaboration with scientists, industries, research labs etc. Overall, the faculty was engaged in 59 external collaborations, of which 9 are with industry labs and 50 are academic collaboration, as given in **Appendix D**.



## Incubation

The Incubation Centre was formally inaugurated on 6<sup>th</sup> April 2015 by Mr. R. Chandrashekhar, President of NASSCOM.

The objective of the Incubation Centre is to support start-ups, promote innovation in IT, and encourage unique ideas that address technology-based solutions in IT, research, and entrepreneurship. The Centre will provide budding entrepreneurs essential services for a new start-up along with mentorship from academia, industry, venture capitalists and angel investors.

Research and collaborative work at IIIT-Delhi have resulted in five start-ups, all of which are currently in early stages. IIIT-D recognizes this as an opportunity to support innovation and social & technological entrepreneurship and has therefore set up an Incubation Centre at the institute campus.

### Grant from the Delhi Government

The institute received funding of Rs 1.5 Crore from the government as per its incubation policy to promote entrepreneurship in the Capital.

The fund will be used to assist students to aspire to become entrepreneurs. Through this, the institute will support government's incubation policy to encourage the start-up culture in Delhi. At IIIT-Delhi, we have a highly accomplished and motivated faculty that helps students to acquire skills required to succeed in the competitive start-up environment. We regularly conduct start-up fairs and programmes in order to provide exciting opportunities for our students where they can interact with business leaders and consultants face to face. Many of IIIT-Delhi alumni have already created a niche in the business world.



## Startup Fair

The Start-up Fair 2016 was organized by IIIT-Delhi Placement Cell on 29th April 2016. The fair was open for all students from 2nd year to pre-final year including Masters, and Bachelors. Over 30+ promising start-ups such as Little Black Book, Design Bids, Campk12, Medhoop, Healers at Home, Fit-nut Insta Bounce and many more doing interesting work participated in the event.

These start-ups offered various internships openings - technical as well as non-technical roles. It was a great opportunity for students to gain experience of working in a start-up environment.



# Outreach and Professional Services



## Conference/ Short courses/ Seminars/ Workshops organised at IIIT-Delhi

IIIT-Delhi has organized many conferences, seminars, workshops, short courses in the past academic year. Some of these are highlighted below:

Title	Organiser	Dates	Number of attendees (approx)
Nature's Niche in Multi-Criterion Design and Optimization	Institute Seminar	August 7, 2015	14
Multiscale computer simulations as a tool to determine biological specificity	CCB	August 13, 2015	16
Robotics as a Science Enabler: Flying Fast and Low Among Obstacles	Institute Seminar	August 13, 2015	28
Building models and hypotheses from data analysis	CCB	August 20, 2015	14
Wireless Local Area Networks (WLANs): A Physical Layer Perspective	Institute Seminar	August 20, 2015	23
Cell Phone/Tower Radiations Hazards and Solutions	Institute Seminar	August 27, 2015	19
Designing drugs using computational tools	CCB	August 28, 2015	15
Compiler-directed Local Memory Reconfiguration	Institute Seminar	September 3, 2015	31
Proteogenomics: a treasure trove to decipher protein coding genes	CCB	September 09 2015	14
Look Beyond, See Invisible	Public Lecture	September 17, 2015	120
The Latent Power of Absurd Idea aka Robust Query Processing	Institute Seminar	October 1, 2015	23
Did You Know?- Mining Interesting Trivia for Entities from Wikipedia	Institute Seminar	October 8, 2015	30
Evolution of Human Cognition	Institute Seminar	October 29, 2015	23
Resolving Atom in our Backyards: Indigenous Technology in a Globalized World	Institute Seminar	November 5, 2015	36
Confessions of an Accidental Entrepreneur	Institute Seminar	November 17, 2015	40

<b>Title</b>	<b>Organiser</b>	<b>Dates</b>	<b>Number of attendees (approx)</b>
Watson and the dawn of Cognitive Computing	Institute Seminar	November 19, 2015	25
Computational biology in Drug Discovery	CCB	November 30, 2015	16
An Information-Processing View of Reaction Networks	Institute Seminar	January 7, 2016	30
Quantitative Proteomics Analysis And Visualization	CCB	January 12, 2016	14
Computational Approaches For Identification of Genome Encoded Small Molecules & Novel PTM Catalyzing Enzymes	CCB	January 19, 2016	16
Precision Medicine - Opportunities and Challenges	CCB	January 25, 2016	15
Computational Electromagnetics in Remote Sensing	Institute Seminar	January 28, 2016	36
Understanding of the Human genome and how genomics has evolved in the last decade	CCB	February 1, 2016	16
LTE-WiFi Interworking and Aggregation	Institute Seminar	February 4, 2016	38
Constructing Disease Networks	CCB	February 09 2016	16
Connect - Create - Change	Institute Seminar	February 11, 2016	33
4th Security and Privacy Symposium	CERC	February 12 and 13 2016	160+
Faculty and student's interactive session with Mr. K. Dinesh, Co-Founder, Infosys.	Prof. Pankaj Jalote	February 12, 2016	35
Microsoft Research India Talk Overview	Institute Seminar	February 18, 2016	37
Wireless Powering for Internet of Things	Institute Seminar	March 3, 2016	38
Data Science In Drug Discovery	CCB	March 08 2016	27
Using Online Social Media for Intelligence and Policing	CERC	March 14 and 15,2016	30+
Magnetic Resonance Spectroscopic Imaging and its applications in Prostate Cancer	CCB	March 15, 2016	18
Would computers cure diabetes?	Institute Seminar	March 17, 2016	33
Vaccination, Herd-immunity And Choices - Population Dynamics to Policy-Making	CCB	March 29, 2016	17
LOMo: Latent Ordinal Model for Facial Analysis in Videos	Institute Seminar	March 31, 2016	32
Stochastic model of protein bursts in the lactose operon of Escherichia coli	CCB	April 04 2016	14
Parameter Estimation and Optimum Experimental De-sign	Prof. Pankaj Jalote	April 12, 2016	34
Coupled flow: aspects of discretization, solvers, and high-performance implementation	Prof. Pankaj Jalote	April 12, 2016	37



## Distinguished Visitors to IIIT-Delhi

The aim of inviting distinguished visitors to IIIT-Delhi is to provide opportunities to our faculty to strengthen collaborative research and enhance their visibility both in academia and industry. Many distinguished speakers from academia and the industry visited IIIT-Delhi and this served as a venue for discussing research. Some of these distinguished visitors are mentioned below:

Speaker	Title	Date
Mr. Jitin Chawla, Centre For Career Development (CCD)	Principals/ Counselors Meet on “Digital India”	Dec 8 <sup>th</sup> , 2015
Mr. Rajdeep Sardesai, Consulting Editor At India Today Group.	Role of Media in Today’s India	Jan 14 <sup>th</sup> , 2016
Mr. K. Dinesh, Co-Founder, Infosys	An interactive session with faculty & students	Feb 12 <sup>th</sup> , 2016
Prof. Rahul Banerjee, Bits Pilani	Security and Privacy Issues in Wearable and Vehicular Computing Systems	Feb 13 <sup>th</sup> 2016
Dr. G. Athithan, DRDO	Concepts and Technologies for Cyber Defense	Feb 13 <sup>th</sup> 2016
Dr. Rajendra S Pawar, Chairman & Co- Founder, NIIT Group and Founder, NIIT University	Cyber Security – The Indian Approach	Feb 13 <sup>th</sup> 2016
Ms. Sunila Menon, EMC	Identifying Malware designed for Deception	Feb 13 <sup>th</sup> 2016
Mr. Samavedam Sarma, Cert-In	Current Cyber Security Incident Trends	Feb 13 <sup>th</sup> 2016
Mr. Amit Patil and Sachin Vaidya, Vmware	Security – The need for separate trust domains and techniques for effective response	Feb 13 <sup>th</sup> 2016
Mr. Manish Sisodia Deputy Chief Minister Of Delhi	CHIEF GUEST, Smarter Delhi Workshop	Feb 13 <sup>th</sup> 2016
Mr. Ashish Khetan, Vice Chairperson, Delhi Dialogue Commission	The importance of involving citizens in every government initiative, policy formation, etc.	Feb 13 <sup>th</sup> 2016
Dr. Valerie Issarny Inria Research Director, France	The importance of running a urban-scale experiment in the undertaking of smart city research initiatives.	Feb 13 <sup>th</sup> 2016

<b>Speaker</b>	<b>Title</b>	<b>Date</b>
Mr. Arun Narayanaswamy R&D Director At Vmware	Smart City infrastructure requirements	Feb 13 <sup>th</sup> 2016
Prof. Bharadwaj Amrutur Professor at Indian Institute of Science	Smart water distribution system.	Feb 13 <sup>th</sup> 2016
Mr. Saurav Kumar Founder And Ceo At Cube26	Home Automation & Data.	Feb 13 <sup>th</sup> 2016
Prof. K.R. Rao IIT Delhi	Pedestrian facilities – Are they smart?	Feb 13 <sup>th</sup> 2016
Mr. Sundeep Sahni Vice President of Ola Cabs	What start-ups are doing in the smart city space	Feb 13 <sup>th</sup> 2016
Mr. Anurag Agrawal Principal Scientist At Csir Igib	Enabling effective and affordable healthcare delivery and research.	Feb 13 <sup>th</sup> 2016
Prof. Shail Kumar, Author	Building Golden India	March 16 <sup>th</sup> , 2016
Prof. Johannes Schloeder and Prof. Ekaterina A. Kostina, Heidelberg Center South Asia	Parameter Estimation and Optimum Experimental De-sign	April 12 <sup>th</sup> , 2016
Prof. Peter Bastian and Prof. Guido Kanschat, Heidelberg Center South Asia	Coupled flow: aspects of discretization, solvers, and high-performance implementation	April 12 <sup>th</sup> , 2016



## Research Showcase

The Research Showcase at IIIT-Delhi is an annual event and this year it was held on 11th and 12th March 2015. The purpose of this event is to showcase, the research and development efforts of the students of IIIT-Delhi. The showcase aligns well with IIIT-Delhi's focus of being a research-led institute. **41 posters** and **16 demos** were presented and **38 posters** and **10 demos** were selected and awarded by the Director. The showcase included some recent innovations, and real-world applications by various research groups at IIIT-Delhi including Emerging Architecture & System Design, Image Analysis & Biometrics, Information Management & Data Analytics, Mobile & Ubiquitous Computing, Security & Privacy, Software Engineering & Theory as well as outstanding course projects undertaken by the students as part of their curriculum. **6 Start-ups** were also selected to deliver a talk on day two.

Research Showcase invites faculty of other institutes, industry professionals, media, students, parents and other tech-savvy visitors. It is an open house where prospective students, recruiters, faculty, and parents are encouraged to come and explore the campus and engage with the students and staff at IIIT-Delhi. The event serves as a platform to encourage faculty, staff, business and industry leaders to come together for a day of collaboration and develop a deeper understanding as to how research adds value to the community and society.



### Participation of faculty In National and International Seminars and as Invited Speaker

Our faculty members attended various national and international conferences and presented their research results and gave lectures and presentations to enhance and share their academic and professional expertise. The detailed list is given in **Appendix E**, and a summary is given below

Guest Lecture/ Keynote Speaker in national and international Seminars	82
Panel/ Session Chair/ Member of Session or Presentation in national and international seminars	4
Tutorials/ short-courses/ Workshop/ Competitions Organised	17
Served as external examiner/ Thesis committee	3

### Professional Services by faculty

Our faculty members chaired and were members of several committees in national & international conferences. Many of the faculty members are part of Editorial Boards and regularly serve as reviewers of national & international journals. The list is given in **Appendix F**, and a summary is given below

VP/Chair/ Co-Chair/ Editor/Associate Editor/ Area Chair of Journals	20
Chair/ Co-Chair/Task-Force/ Committee Member of national and international conferences	90
Reviewer of Conferences/ Journals	104
Advisory for Government	2
Organised special session/lecture/workshop/ symposium	15
External Examiner/ Curriculum Development Committee Member	13





# Awards and Recognitions



## Awards and Recognitions

### Awards and Recognitions to our faculty

Our faculties have received several coveted awards for their papers and posters. Many have also been granted prestigious research grants and fellowships such as the Deity Young Faculty Fellowship and Visvesaraya Young research fellowship and many more. The detailed list is given in **Appendix G**

Fellowships	8
Teaching excellence	8
Best poster/demo/paper award in national and international conferences	11
Innovation Award	5
IEEE/ACM Member Grade Elevation	2

### Student's Academic Achievements

At IIT-Delhi, our students take full advantage of research labs, services, education centers, industry linkages, unmatched faculty and library resources. With some of the most future-focused facilities led by some of the best minds in their fields, it's no wonder our students are consistently ranked as good as those from the nation's top universities. Awards like 'Gandhian Young Technological Innovation Awards/Appreciations 2016', 'J.N. Tata Endowment Scholarship for Higher Education', 'Google's Internet of Things (IoT) Technology Research Award' and many more indicate that these students are changing the world even before they pass out from the institute.

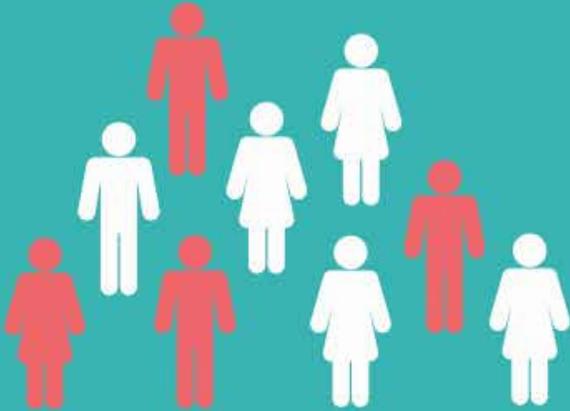
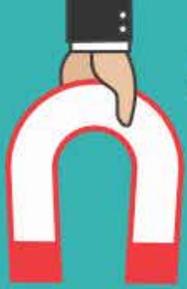
Apart from their studies, our students actively take part in professional services like taking tutorials, giving lectures, working in national and international research labs. The results continue to show how successful our approach to learn is.

Details of students' academic achievements are given in **Appendix H**



# Placements and Internships

# CAMPUS PLACEMENT 2016



32.5 LAKHS HIGHEST M.TECH. PACKAGE (2016)

26.82 LAKHS B.TECH. PACKAGE (2016)

## Placements

IIIT-Delhi provides a platform to facilitate interaction between students and companies, so both can find the best match as per their aspirations and requirements. We highly value our partnership with recruiters and remain committed to making the recruiting experience productive and positive for companies.

Our graduates combine rigorous thinking, hard work, and fundamentals. The institute also promotes a host of student activities to improve their soft skills, which are imperative for one to excel in his/her workspace. The result of this is evident in the institute's placement record

This year, the maximum annual compensation was Rs 32.5 lakh. The class of BTech 2016's average CTC went up from last year's Rs 9.33 lakh to Rs 11.41 lakh this year, with highest being ₹ 26.82 lakh for Indian roles and ₹ 32.5 lakh for the overseas role. Similarly, the class of M.Tech 2016's average CTC went up from Rs 8.8 lakh to Rs 10.22 lakh, the highest being ₹ 19 lakh.

The Institute received 319 offers against 222 students who registered for campus placements. Of these, 220 were Indian offers and 2 were overseas. This year we received 102 A+ offers which are almost double that of last year's 53 A+ offers. 85 companies came for final placements, out of which 38 were A+ and 47 were A. Recruiters included Google, IBM, Samsung, Accenture and many others, offering a diverse array of profiles like Software Developers, Research Engineers, Data Scientist, Design Engineer, System Engineer, Business Analyst, Frontend /Backend developers etc.

This has been a wonderful year for placements, and we have been able to place 95% students of BTech CSE and 93.33 % MTech CSE. We were able to meet the student's interest, and for the first time hosted the Big 4 consulting groups in the campus.

Some of the companies that visited IIIT-Delhi :



## Internships

The summer internship program at IIIT-Delhi continues to grow every year. In addition to having our students continue working on a project/research topic, through this program we also give opportunities to students from other Institutions to work in IIIT-Delhi.

This program, which is also a part of our outreach initiative, aligns with our vision to have an open campus, facilitating greater community engagement and helping strengthen our PhD intake. We continue to get support from Microsoft through their Rx program for supporting the interns.

Students at IIIT-Delhi can opt for following kinds of internships:

1. Summer Internship (May-July)
2. Semester Internship 4-6 months, is not a mandatory part of the curriculum. If any BTech student proceeds for the same, it will be deemed as a semester break. MTech students need to take prior permission from their mentors for the same.

Internship Details for 2015-2016	
Summer Internship	63
Long Duration Internships	27
Private	69
Govt.	5
University	16





# Student Activities



## Sports

Sports enthusiasts find plenty to engage themselves at IIIT-Delhi, from intra-college events like football, table tennis, pool tournaments and the Intramural, to external events like the Delhi Half Marathon and Twaran, the inter-IIIT sports meet. The institute is equipped with a number of indoor and outdoor sports facilities.

The top floor of the Dining Block houses a gymnasium, table tennis tables, and pool tables, while chess boards and carom boards are available in the hostel common rooms. The institute currently has two tennis courts, a basketball court, a volleyball field and two badminton courts.

IIIT-Delhi has been regularly organizing various sporting events like the Intra-IIIT- Delhi football tournament Joga Bonito, Table Tennis, and Pool tournaments, etc. Every year IIIT-Delhi students participate in several tournaments in Delhi and outside Delhi.

This year we participated in the LSR invitational tournament, Spardha-IIT BHU Sports Fest , Twaran Sports Fest at Gwalior and achieved positions in almost every sports activity. Also, a group of students from IIIT-Delhi participated in Delhi Half Marathon, running for a cause.

We also organize summer camps for various sports activities at IIIT-Delhi campus. A mega sports event, Triquetra, was conceived and started from the academic year 2015-2016. Triquetra is an event jointly held by IIIT-Delhi, NSIT, and DTU. The first of this mega event Triquetra-2016 was organized by IIIT-Delhi.

On various occasions, IIIT-Delhi invited other college teams for friendly/practice matches, including those from G.B.Pant Engineering College, College of Vocational Studies, Kirorimal College, Jamia Millia Islamia etc.



## Fest

There are two main student festivals - the technical festival **Esya** in August, which is a platform to not only showcase technical expertise but also integrate technology with social causes. 'ESYA' which means a journey, an adventure - exploring Infinity and Beyond, is the IIIT-Delhi's TechFest, and is one of the largest events organized annually on the campus. Esya has now become one of the most vibrant tech-fests in Delhi.

The other is **TEDxIIITD**, which students have been organizing for the last two years. This is hugely successful, with excellent young inspirational speakers. It is expected to become a regular event in the coming years. In addition, there are cultural events like **Cadence, Research Showcase**, and other Tech events.

The cultural activities (arts and literary) for the year are planned together by the Student Council and the Cultural Secretary. In all, a considerable number of extra-curricular activities take place on the campus throughout the year.

## Student Clubs

At IIIT-Delhi, a major chunk of students' time goes in academics as it requires hard work and focused effort. Nonetheless, there are many facilities and **18 clubs** to grow in various ways. Students take part in a number of social and cultural activities. If they want to pursue a hobby, they just need to find some like-minded people to start their own club.

These clubs not only hone their leadership skills but also help instill team spirit in them. Last year; student bodies organised as many as **55 events**. Several student clubs in the institute enable them to enhance their talent in areas beyond academics. Clubs already in existence at IIIT Delhi are Quiz Club - Trivialis, Design Club - Ink, Dance Club - MadToes, Music Club - Audio Bytes, Photography Club - Tasveer, the Literary Club, Eco Club and Adventure Club.

These clubs enable students to come together, share knowledge and mentor those looking to enter into the field. Students can also suggest books for the library, organize a blood donation campaign, plan for an adventure trip during summer holidays or purchase a new instrument for the music room. **250 students** participated in sports activities, **50 in cultural** activities, **20 in quiz** contests, and **150 in technical** events.

Students are also encouraged to help the society in some way or the other. Almost every student is involved with various NGOs all over the country. The institute also has its own home-grown NGO of students called 'FindAWay', which helps the children in need.

Summary report of student clubs' activities for 2015-16, is in **Appendix I**.



## Community work and Self Growth

Students are encouraged to engage constructively with the wider community and society. Community work provides students a chance to build and strengthen the broader connection with the society and the self. At IIIT-Delhi, students are required to do 70-80 hours of community work. This activity teaches students about their rights, duties, and responsibilities as citizens, and their ability to bring about meaningful change through advocacy and service. It enables students to apply their skills and knowledge to real needs in their local community. Students are encouraged to give back to society through compulsory community work credits. Students are also encouraged to learn activities like Bird Watching, Basketball, Table Tennis, Swimming, Cooking, Painting, Yoga, Aerobics, and Foreign Language for their personal growth and development

It is mandatory for every undergrad student to earn 2 credits of Community Work and 2 credits of Self-Growth by working for 70-80 hours for each.

This year our students worked on two exceptional community work projects

1. **Students teach at Government Schools:** Students from IIIT-Delhi volunteered to visit 5 government schools on weekends to teach the students of class 12<sup>th</sup>. This initiative drew a great response from the school students and teachers. The students were taught various subjects like Computer Science, Communications, English, Science and Mathematics. The program was extremely admired and encouraged by school teachers and principals. In view of the remarkable outcomes, we will be continuing this activity this year.
2. **Summer School:** The latest initiative of IIIT-Delhi delves into its philanthropic roots: Helping Hands. It originated from another social initiative: that of teaching in low-income government schools. Five broad subjects were decided: computer skills, personality development and communication skills, math and science topics, problem-solving abilities, and general knowledge. Ninety-one children registered for the summer school and the feedback is highly positive. The children were between 12 and 14 years of age and studied in class 8 and 9. The children were nominated from the few government schools where IIIT-Delhi students taught during the semester. The summer school commenced from 16 June 2016 and spanned five weeks, with five working days of four hours each week. The children enjoyed all the activities that the students had planned for them, so much so that they reached several minutes before classes were to commence. For the closing ceremony, the children prepared various performances to show their love and appreciation for this initiative. They spoke on stage about their experience of being a part of the summer school. The children who were once afraid of asking a question now confidently delivered speeches and spoke in English fearlessly. This transformation was a rewarding experience.



The institute also has a Community Work Club called **Communitas - Opere**, which organizes blood donation camps and facilitates student partnerships with NGOs. Main areas of intervention are listed below:

SI No	Sector	No. of Students
1	Teaching	33
2	Data collection, Documentary, Data entry and case study	7
3	Help Underprivileged section of Society	6
4	Help Homeless People	4
5	Welfare of rural community	3
6	Blind Education & Training	3
7	Web site and portal design for NGO	2
8	Environment Awareness and Community Health	2
9	Health Campaign and Survey	2
10	Women Welfare	1
11	Handicapped Children	1
	<b>Total</b>	<b>64</b>





**IIIT-Delhi in NEWS**





**Faculty and Staff**

## Current Full-Time Faculty:

<p><b>Alexander Fell</b>  Assistant Professor (ECE)  PhD (2012), Indian Institute of Science, Bangalore, India  Coarse Grain Reconfigurable Architectures (CGRAs), Network-on-Chip,  Embedded Systems, FPGAs  alex@iiitd.ac.in</p>	
<p><b>Anand Srivastava</b>  Professor (ECE)  PhD (2003), Indian Institute of Technology-Delhi  OFDM based Optical Core and Access Networks, Long-Reach PONs,  Optical Wireless Communication Systems,  Optical Signal Processing, Green Telecom Networks  anand@iiitd.ac.in</p>	
<p><b>Amarjeet Singh</b>  (Presently on leave)  Assistant Professor (CSE, ECE)  PhD (2009), Electrical Engineering, University of California, Los Angeles, USA  Mobile Sensing, Approximation Algorithms, Environmental Monitoring,  Low-Cost Technologies  amarjeet@iiitd.ac.in</p>	
<p><b>Angshul Majumdar</b>  Assistant Professor (ECE)  PhD (2012), Electrical &amp; Computer Engg. University of British Columbia, Canada  Compressed Sensing, Low-rank matrix recovery, Magnetic Resonance Imaging,  Color Imaging  angshul@iiitd.ac.in</p>	
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<p><b>Naqueeb Warsi</b>  Assistant Professor (ECE, Applied Maths)  PhD (2015), Information Theory from the Tata Institute of  Fundamental Research, Mumbai  naqueeb@iiitd.ac.in</p>	
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<p><b>P B Sujit</b>  Assistant Professor (ECE)  PhD (2006), Aerospace Engineering, Indian Institute of Science, Bangalore  Unmanned Vehicle (aerial, underwater, and surface), Multi-robot systems,  Guidance and Control  sujit@iiitd.ac.in</p>	
<p><b>Pankaj Jalote</b>  Director &amp; Professor (CSE)  PhD (1985), Computer Science, The University of Illinois at Urbana Champaign, USA  Software Engineering, Fault Tolerance, Distributed Systems  jalote@iiitd.ac.in</p>	
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<p><b>Pushendra Singh</b>  Associate Professor (CSE)  PhD (2004), Inria-Rennes, Université de Rennes 1, France  Mobile Systems &amp; Applications, ICT4D, Mobile Healthcare,  Content-Centric Networking  psingh@iiitd.ac.in</p>	
<p><b>Pravesh Biyani</b>  Assistant Professor  PhD (2012), ECE, IIT Delhi  Optimization for signal processing &amp; communications  praveshb@iiitd.ac.in</p>	

<p><b>Pydi Ganga Mamba Bahubalindrani</b>  Assistant Professor (ECE)  PhD (2014), Electrical and Computer Engineering  bpganga@iiitd.ac.in</p>	
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<p><b>Rajiv Raman</b>  Assistant Professor (CSE)  PhD (2007), Computer Science, University of Iowa, USA  Algorithms, Graphs, Combinatorial Optimization  rajiv@iiitd.ac.in</p>	
<p><b>Richa Singh</b>  Associate Professor (CSE)  PhD (2008), Computer Science, West Virginia University, USA  Biometrics, Machine Learning, Pattern Recognition  rsingh@iiitd.ac.in</p>	
<p><b>Saket Anand</b>  Assistant Professor (CSE, ECE)  PhD (2013), Electrical and Computer Engineering, Rutgers University, NJ, USA  Computer Vision, Image and Scene Understanding, Robust Statistical Methods,  Pattern Recognition, Machine Learning  anands@iiitd.ac.in</p>	
<p><b>Sanjit Krishnan Kaul</b>  Assistant Professor (ECE)  PhD (2011), Electrical and Computer Engineering, Rutgers University, USA  Wireless Systems, Vehicular Networks, Delay Tolerant Networks,  Disaster Management, Intelligent Transportation  skkaul@iiitd.ac.in</p>	
<p><b>Sambuddho Chakravarty</b>  Assistant Professor (CSE)  PhD (2014), Columbia University, USA Network Anonymity and Privacy,  Network Surveillance and Anti-Censorship and Network and  Distributed Systems Security  sambuddho@iiitd.ac.in</p>	

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<p><b>Somitra Kr. Sanadhya</b>  Assistant Professor (CSE, AM)  PhD (2009), Computer Science, Indian Statistical Institute, Kolkata  Cryptology, Machine learning, and Bioinformatics  somitra@iiitd.ac.in</p>	
<p><b>Sriram K</b>  Assistant Professor (CB)  PhD (2004), Chemistry, IIT Madras  Systems biology, Cell division cycle, Circadian rhythms,  Computational cognitive neuroscience  sriramk@iiitd.ac.in</p>	
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<p><b>Tavpritesh Sethi</b>  Assistant Professor (CB)  Ph.D. from CSIR-Institute of Genomics and Integrative Biology, Delhi.  tavpriteshsethi@iiitd.ac.in</p>	

<p><b>Sujay Deb</b>  Assistant Professor (ECE)  PhD (2012), Washington State University  Multi-core processor architectures, Wireless network-on-chip,  Emerging interconnection technologies for multi-core chips  sdeb@iiitd.ac.in</p>	
<p><b>Sumit J Darak</b>  Assistant Professor (ECE)  PhD (2013), Nanyang Technological University (NTU), Singapore  Reconfigurable filter and filter banks for multi-standard wireless  communication receivers, Dynamic Spectrum Learning,  Tunable Bandwidth Access and RF Harvesting in Green Cognitive Radios.  sumit@iiitd.ac.in</p>	
<p><b>Venkata M. Viswanath Gunturi</b>  Assistant Professor (CSE)  PhD (2015), Computer Science and Engineering,  The university of Minnesota, Twin Cities, USA  Spatial and Spatio-temporal databases, Spatial data mining, Graph Algorithms,  Geographic Information Science  gunturi@iiitd.ac.in</p>	
<p><b>Vikram Goyal</b>  Associate Professor (CSE)  PhD (2009), Computer Science and Engineering, IIT Delhi  Databases, Data Privacy and Security  vikram@iiitd.ac.in</p>	
<p><b>Vinayak Naik</b>  Associate Professor (CSE)  PhD (2006), Computer Science and Engineering, Ohio State University, USA  Mobile Computing, Sensor Networks, Wireless Networks, and Systems  naik@iiitd.ac.in</p>	
<p><b>Vivek Bohara</b>  Assistant Professor (ECE)  PhD (2011), Electrical and Electronic Engineering,  Nanyang Technological University, Singapore  Wireless communication, Cognitive and Cooperative wireless networks,  Wideband Power amplifiers, Digital predistortion  vivek.b@iiitd.ac.in</p>	

## Deans and Registrar

	<p><b>Dheeraj Sanghi</b> Visiting Faculty Dean of Academics Affairs &amp; External Relations dheeraj@iiitd.ac.in</p>		<p><b>Pushendra Singh</b> Associate Professor (CSE) Associate Dean of IRD psingh@iiitd.ac.in</p>
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## Visiting Faculty

<p><b>Akshay Kumar</b> Ph.D. University of Delhi (2014) Senior Research Fellow Indian Council of Medical Research, Consultant Psychologist BLK Super Speciality Hospital akshay@iiitd.ac.in</p>	<p><b>G.S. Visweswaran</b> Retired Professor from IIT-Delhi CAD of VLSI, Design of Digital, Analog and Mixed-Signal VLSI Circuits viswes@iiitd.ac.in</p>
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<p><b>Brijesh Eshpuniyani</b> PhD (2003), Aeronautics, Purdue University His area of expertise is Fluid Mechanics. His present research focus is on Transition &amp; Turbulence. beshpuniyani@iiitd.ac.in</p>	<p><b>Jyoti Sinha</b> Co-founder and Chief Technology Officer (CTO) at Omnipresent Robot Tech. MS (Computer Science) from Technical University of Munich (TUM), Germany/ University of California Berkeley (UCB), USA jyotisinha@iiitd.ac.in</p>
<p><b>K.K. Biswas</b> Former Professor, IIT Delhi, Machine Learning, Computer Vision Research interest is Image and Video Processing, Machine Learning with applications in activity recognition and Bio-informatics kkb@iiitd.ac.in</p>	<p><b>Pankaj Vajpayee</b> Has over 22 years of corporate experience primarily in the field of investment banking and portfolio investment advisory activities pvajpayee@iiitd.ac.in</p>

<p><b>K M Pathi</b>  Research interests: Behavior Change Communication, Communication Ethics.  An alumnus of Delhi University, visiting faculty to National Centre for Good Governance (Delhi), Central Training Establishment, Air India, (Hyderabad). Also an empanelled training faculty with Larson &amp; Toubro, Tamilnadu Salt Corporation.  kmpathi@iiitd.ac.in</p>	<p><b>Raj Ayyar</b>  Full-time Assistant Professor, East Florida State University  Adjunct Faculty, West Valley College and Laney College  MA (Philosophy), St. Stephen's College, Delhi  MA (Philosophy), Southern Illinois University, USA  raj@iiitd.ac.in</p>
<p><b>Manohar Khushalani</b>  Former Director, Environment, and Sociology, at the National Water Academy, Khadakwasla, &amp; Member Secretary, National Environmental Monitoring Committee for River Valley Projects  Bachelor in Civil Engineering from BITS Pilani  Courses on 3D Modelling and Finite Element analysis from IIT, Delhi  manohar@iiitd.ac.in</p>	<p><b>Samaresh Chatterji</b>  Ph.D. (1979), Mathematics, Wayne State University, Detroit  Former Dean – Academic Programs, DA-IICT, Gandhinagar  Abstract Algebra, Graph Theory  samaresh@iiitd.ac.in</p>
<p><b>Amrit Srinivasan</b>  Ph.D. University of Cambridge, UK  Recipient of the Commonwealth Scholarship Award, the Shastri Indo Canadian Fellowship Award, the Charles Wallace India Trust Award and the ICCR's Visiting Chair in Humanities &amp; Social Sciences Award  amrit@iiitd.ac.in</p>	<p><b>Priyank Narayan</b>  He heads the Centre for Entrepreneurship at the Ashoka University  A Certified Axiometrix Assessor on Thinking Pattern Profile by Hartman Institute, USA,  Priyank is also a Quality Six Sigma Green Belt.  priyank@iiitd.ac.in</p>
<p><b>Srikanth Saripalli</b>  Ph.D., University of Southern California, 2007  Srikanth Saripalli is a Roboticist with research interests in unmanned systems in general and aerial vehicles in particular.  srikanth@iiitd.ac.in</p>	<p><b>Tanusri Bhattacharya</b>  PhD in Computer Science from The University of Melbourne in 2016  Research interests in spatial data mining, location based services, pervasive and mobile computing  tanusri@iiitd.ac.in</p>

## Administrative Staff:

- Mr. Abhinay Saxena, Manager (IT)
- Mr. Adarsh Kumar Agarwal, Junior Manager (System Admin & Networking)
- Mr. Ajay Kumar, Deputy Manager (Store & Purchase)
- Mr. Amit Shankdher, Deputy Manager (Finance & Accounts)
- Mr. Ankit Agarwal, Web Manager
- Mr. Anoop Singh, Deputy Manager (HR & Support Services)
- Ms. Anshu Dureja, Junior Manager, (Academics)
- Mr. Anurag Tyagi, Junior Engineer (Civil)
- Mr. Arun Verma, General Manager (Facilities)
- Mr. Ashwani Kansal, Registrar
- Mr. Ashutosh Brahma, Junior Manager (Academics)
- Mr. Bhawani Shah, Junior Manager (System Admin & Networking)
- Mr. Gursevak Singh, Junior Manager (HR)
- Mr. Husain Raza, Manager (Projects)
- Ms. Jahnvee Tripathi, Junior Manager (Student Affairs)
- Mr. Kapil Chawla, Controller of Finance
- Mr. Khagendra Joshi, Junior Research Engineer
- Mr. K. P. Singh, Academic In-charge
- Ms. Nayana Samuel, Junior Manager (ER)
- Ms. Nidhi Yadav, Junior Manager (IRD)
- Ms. Nisha Narwal, Junior Manager (Academics)
- Ms. Pallavi Kaushik, Assistant Manager (Corporate Communication)
- Ms. Pooja Sagar, Admin Assistant
- Mr. Pranshu Nagpure, Assistant Manager (Placements & Internships)
- Ms. Prachi Mukherjee, Junior Manager (Academics)
- Ms. Priti Patel, Junior Manager (Academics)
- Mr. Prosenjit Chatterjee, Assistant Manager (Finance & Accounts)
- Mr. Rahul Gupta, Junior Research Engineer
- Mr. Rajendra Singh, Deputy Manager (Library & Information Service)
- Ms. Rashmil Mishra, DGM (Corporate Relations & Placements)
- Mr. Ravi Bhasin, Assistant Manager (Student Affairs)
- Ms. Sana Ali Naqvi, Junior Research Engineer
- Mr. Sanjay Roy, General Manager (Projects)
- Ms. Sheetu Ahuja, Manager (Academics)
- Ms. Shipra Jain, Executive Assistant
- Mr. Umesh, Junior Engineer
- Mr. Vinod Kumar, Senior Executive Assistant
- Mr. Yogesh Sangwan, Junior Manager (System Admin & Networking)



## Appendices

## Appendix A : Academic research and Publications

### Conference Paper

#### Dr. Alexander Fell

1. A. Fell, R. Narayan, S. K. Nandy “A Deterministic, Minimal Routing Algorithm for a Toroidal, Rectangular Honeycomb Topology Using a 2-tupled Relative Address”, in 28th IEEE International System-On-Chip Conference (SOCC) 2015. Pp. 191 – 196.
2. R.Kaur, H. Rawat and A. Fell, “A 6T SRAM Cell Based Pipelined 2R/1W Memory Design Using 28nm UTBB-FDSOI”, in 28th IEEE International System-On-Chip Conference (SOCC) 2015. Pp. 310 – 315.
3. G. Narang, P. R. Gupta, A. Fell and A. Grover, “Floorplan and Congestion Aware Framework for Optimal SRAM Selection for Memory Subsystems”, in 28th IEEE International System-On-Chip Conference (SOCC) 2015. Pp. 105 – 110.
4. R. Kaur, A. Fell, H. Rawat, “XMAT: A 6T XOR-MAT based 2R-1W SRAM for High Bandwidth Network Applications”, DAC WiP, 2015.

#### Dr. Anand Srivastava

1. P. Kumar and A. Srivastava, “Receiver Sensitivity Improvement of OFDM FSO link using SRMdevice,” in IEEE International Conference on Advance Networks and Telecommunication Systems(ANTS 2015), December 15-18, 2015, ISI Kolkata, India.Pp. 1 – 6.
2. P. Kumar and A. Srivastava , “Enhanced Performance of FSO Link using OFDM and Comparison with Traditional TDM-FSO Link,” in IEEE International Broadband and Photonics(IBP-2015) Conference, April 22- 24, 2015, Bali, Indonesia. Pp. 65 – 70.

#### Dr. Angshul Majumdar

1. S. S. Ram and A. Majumdar ,”Through-wall Propagation Effects on Doppler-enhanced Frontal Radar Images of Humans”, in IEEE RadarCon, 2016.
2. A. Gogna and A. Majumdar,”Fast Acquisition for Quantitative MRI Maps: Sparse Recovery from Non-linear Measurements”, in Data Compression Conference.(Core A\*)
3. K. Gupta, A. Raj and A. Majumdar, “Analysis and Synthesis Prior Greedy Algorithms for Non-linear Sparse Recovery”, in Data Compression Conference. (Core A\*)
4. A. Majumdar and R. K. Ward, “Robust Dictionary Learning: Application to Signal Disaggregation”, in IEEE ICASSP.
5. M. Jain, N. Kumar, S. Deb and A. Majumdar, “A Sparse Regression based Approach for Cuff-less Blood Pressure Measurement” in IEEE ICASSP 2016. Pp. 789 – 793.
6. H. K. Agrawal and A. Majumdar, “Blind Hyperspectral Denoising”, in NCVPRIPG 2015. Vol. 119, pp. 136 - 141.
7. A. Majumdar and R. K. Ward, “Learning Space-Time Dictionaries for Blind Compressed Sensing Dynamic MRI Reconstruction”, in IEEE ICIP 2015. Top 10% of accepted papers.
8. A. Majumdar, “Frontal Face Recognition from Video via Rank-Aware Multiple Measurement Vector Recovery”, in IEEE DSP 2015.
9. A. Gogna and A. Majumdar,”Matrix Factorization Model using Kacmarz Algorithm: Application in Sensor Localization”, in IEEE DSP 2015. Best Paper Award
10. P. Bhattacharjee, P. Khurana and A. Majumdar, “Low-rank Matrix Recovery from Non-linear Observations”, in IEEE DSP 2015.

11. A. Majumdar , “Discriminative Label Consistent Dictionary Learning”, in IEEE ICIP 2015.
12. A. Gogna and A. Majumdar, “Supervised Learning in Matrix Completion Framework for Recommender System Design”, in COMAD 2016 (Oral; Acceptance Rate 10%).

#### Dr. Anubha Gupta

1. N. Ansari and A. Gupta, “Joint Framework for Signal Reconstruction using Matched Wavelet Estimated from Compressively Sensed Data”, in IEEE DCC 2016, USA, March 2016. (Core A\* Conference), Poster Paper, Accepted as 1-page paper.
2. N. Jain, V.A. Bohara and A. Gupta, “Compressive Cooperative Communication with Decode and Forward Relay”, in 8th International conference on communication systems and networks (Comsnet, 2016), Bangalore, India, Jan, 2016. (Awarded best poster award honorable mention), Poster presentation.
3. N. Ansari, A. Gupta, A. S. Gupta, “Physics Inspired CS based Underwater Acoustic Channel Estimation”, in IEEE GlobalSIP 2015, USA, Dec. 2015.
4. P. Aggarwal, A. Gupta, and A. Garg, “Joint Estimation of Hemodynamic Response Function and Voxel Activation in functional MRI Data,” in MICCAI 2015, Germany, Oct. 2015. (ECE Approved and CSE Core A conference-Top Medical Imaging Conference).
5. P. Aggarwal, A. Gupta, and V. A. Bohara, “A Guard Interval Assisted OFDM Symbol-Based Channel Estimation for Rapid Time-Varying Scenarios in IEEE 802.11p”, IEEE 26th Annual International Symposium on Personal, Indoor, and Mobile Radio Communications (PIMRC), 4-7 Sept. 2015, Hong Kong.
6. A. Gupta and S.D.Joshi, “Connection between DCT and Discrete-time Fractional Brownian motion”, DCC 2016, USA, March 2016. Poster Paper, Accepted as 1-page paper (Core A\* Conference).
7. N. Ansari, A. Gupta, “Lifting-based Rational Wavelet Design from a Given Signal”, in IEEE International Conference on Digital Signal Processing, July 21-24, 2015, Singapore.
8. N. Ansari, A. Gupta, “Signal-Matched Wavelet Design via Lifting using Optimization Techniques”, in IEEE International Conference on Digital Signal Processing, July 21-24, 2015, Singapore. Regular research paper, published as full paper in IEEE Explore, ORAL presentation.

#### Dr. Chetan Arora

1. Y. Poleg, A. Ephrat, S. Peleg and C. Arora, “Compact CNN for Indexing Egocentric Videos” in IEEE Winter Conference on Applications of Computer Vision (WACV), January 2016.
2. S. Singh, C. Arora, and C.V. Jawahar, “Generic Action Recognition from Egocentric Videos” in Fifth National Conference on Computer Vision, Pattern Recognition, Image Processing and Graphics (NCVPRIPG), December 2015.
3. Y. Poleg, T. Halperin, C. Arora, and S. Peleg, “EgoSampling: Fast-Forward and Stereo for Egocentric Videos” in Proceedings of IEEE International Conference on Computer Vision and Pattern Recognition, CVPR 2015.

#### Dr. Donghoon Chang

1. D. Chang, S. M. R., S. K. Sanadhya, “PPAE: Practical Parazoa Authenticated Encryption Family”. ProvSec 2015: pp.198-211.
2. Akshima, D. Chang, M. Ghosh, A. Goel, S. K.Sanadhya, “Improved Meet-in-the-Middle Attacks on 7 and 8-Round ARIA-192 and ARIA-256”. INDOCRYPT 2015, pp. 198-217.
3. D. Chang, S. K.Sanadhya, N. Sharma, “New HMAC Message Patches: Secret Patch and Crow Patch”. ICISS 2015, pp. 285-302.

4. D. Chang, A. K. Chauhan, Muhammed Noufal K, J. Kang, "Apollo: End-to-End Verifiable Voting Protocol Using Mixnet and Hidden Tweaks". ICISC 2015, pp. 194-209.
5. Akshima, D. Chang, M. Ghosh, A. Goel, S. K. Sanadhya, "Single Key Recovery Attacks on 9-Round Kalyna-128/256 and Kalyna-256/512". ICISC 2015, pp. 119-135.
6. D. Chang, M. Ghosh, S. K. Sanadhya, "Biclique Cryptanalysis of Full Round AES-128 Based Hashing Modes". Inscrypt 2015, pp. 3-21.
7. M. Agrawal, D. Chang, S. K. Sanadhya, "sp-AELM: Sponge Based Authenticated Encryption Scheme for Memory Constrained Devices". ACISP 2015, pp. 451-468.
8. T. K. Bansal, D. Chang, S. K. Sanadhya, "Sponge Based CCA2 Secure Asymmetric Encryption for Arbitrary Length Message". ACISP 2015, pp. 93-106.

Dr. Mayank Vatsa

1. D. Yadav, N. Kohli, P. Pandey, R. Singh, M. Vatsa and A. Noore, "Effect of Illicit Drug Abuse on Face Recognition", in Proceedings of IEEE Winter Conference on Applications of Computer Vision, March 2016 Received the Best Paper Award – CORE A Conference.
2. T. I. Dhamecha, P. Sharma, R. Singh, and M. Vatsa, "Discriminative Face Topics for Face Recognition via Latent Dirichlet Allocation", in Proceedings of IEEE Winter Conference on Applications of Computer Vision, March 2016. CORE A Conference.
3. S. Nagpal, M. Singh, R. Singh and M. Vatsa, "Regularizing Deep Learning Architecture for Face Recognition with Weight Variations", in Proceedings of IEEE International Conference on Biometrics: Theory, Applications and Systems, 2015.
4. A. Chahar, S. Yadav, I. Nigam, M. Vatsa, and R. Singh, "A Leap Password Based Verification System", in Proceedings of IEEE International Conference on Biometrics: Theory, Applications and Systems, 2015 Received the Best Poster Award.
5. S. Ghosh, T. Dhamecha, R. Keshari, R. Singh, and M. Vatsa, "Feature and Keypoint Selection for Visible to Near-infrared Face Matching", In Proceedings of IEEE International Conference on Biometrics: Theory, Applications and Systems, 2015.
6. A. Malhotra, A. Sankaran, A. Mittal, M. Vatsa, and R. Singh, "On Smartphone Camera based Fingerphoto Authentication", in Proceedings of IEEE International Conference on Biometrics: Theory, Applications and Systems, 2015.
7. A. Sankaran, A. Agarwal, R. Keshari, S. Ghosh, A. Sharma, M. Vatsa, and R. Singh, "Latent Finger-print from Multiple Surfaces: Database and Quality Analysis", in Proceedings of IEEE International Conference on Biometrics: Theory, Applications and Systems, 2015.
8. T. I. Dhamecha, P. Verma, M. Shah, M. Vatsa and R. Singh, "Annotated Video Crowd Face Database", in Proceedings of IAPR International Conference on Biometrics, May 2015.
9. R. Bhardwaj, G. Goswami, R. Singh and M. Vatsa, "Harnessing Social Context for Improved Face Recognition", in Proceedings of IAPR International Conference on Biometrics, May 2015.
10. P. Mittal, M. Vatsa and R. Singh, "Composite Sketch Recognition via Deep Network – A Transfer Learning Approach", in Proceedings of IAPR International Conference on Biometrics, May 2015.

Dr. Mohammed S. Hashmi

1. S. Sharma, P. Sehgal, and M. S. Hashmi, "Analysis, Estimation and Mitigation of Common Mode to Differential Mode Noise Conversion in Multiconductor Ribbon Cables", in IEEE 27th Asia Pacific Microwave Conference (APMC), Nanjing, China, December 2015.

2. M. A. Maktoomi, R. Gupta, and M. S. Hashmi, "A Dual-Band Impedance Transformer for Frequency Dependent Complex Loads Incorporating an L-type Network", in IEEE 27th Asia Pacific Microwave Conference (APMC), Nanjing, China, December 2015.
3. G. A. Kumar, M. S. Hashmi, R. Sharma, and N. Ansari, "Statistical Analysis and Parametric Yield Estimation of Standard 6T SRAM Cell for Different Capacities", in IEEE 28th System on Chip Conference (SOCC), Beijing, China, pp. 316-321, Sept. 2015.
4. N. Batra, S. Kaushik, P. Sehgal, M. S. Hashmi, S. Bhalla, and A. Grover, "Static Noise Margin based Yield Modelling of 6T SRAM for Area and Minimum Operating Voltage Improvement using Recovery Techniques", in ACM 26th Great Lakes Symposium on VLSI (GLSVLSI 2016), pp. 117-120, Boston, USA. (Acceptance Rate: 25%)
5. R. Gupta, S. Kumar, S. Kaushik, M. A. Maktoomi, and M. S. Hashmi, "A New L-Shaped Phase Inverter Design Utilizing a Loaded Transmission Line", in IEEE MTT-S 4th International Wireless Symposium (IWS), Shanghai, China, March 2016.
6. M. A. Maktoomi, and M. S. Hashmi, "A CAD Assisted Design Methodology for Wideband Arbitrary Power Division Coupler Implemented in Microstrip Technology", in IEEE 22nd National Conference on Communications (NCC), IIT Guwahati, pp. 412-415, March 2016.
7. D. Rano, and M. S. Hashmi, "Design and Analysis of Wearable Patch Antenna Array for MBAN Applications", in IEEE 22nd National Conference on Communications (NCC), IIT Guwahati, pp. 735-740, March 2016.
8. G. A. Kumar, M. S. Hashmi, and A. Grover, "A New Sense Amplifier Topology with Improved Performance for High Speed SRAM Applications", in IEEE 29th International Conference on VLSI Design (VLSID), Kolkata, pp. 185-190, Jan 2016.
9. D. Sharma, and M. S. Hashmi, "A Meandered Rectangular Monopole Antenna for Quadband Applications", in IEEE MTT-S International Microwave and RF Conference (IMaRC), Hyderabad, pp. 61-63, Dec. 2015.
10. M. A. Maktoomi, and M. S. Hashmi, "A Novel Power Divider Structure using the Gysel and Wilkinson Power Dividers with Only One Grounded Resistor", in IEEE MTT-S International Microwave and RF Conference (IMaRC), Hyderabad, pp. 227-229, Dec. 2015.
11. S. Sharma, P. Sehgal, and M. S. Hashmi, "Analysis, Estimation and Mitigation of Common Mode to Differential Mode Noise Conversion in Multiconductor Cylindrical Cables", by in IEEE 11th India Council Conference (INDICON), Delhi, Dec. 2015.
12. S. Mondal, and M. S. Hashmi, "An Analytical Technique for Transformer based Impedance Matching", in IEEE 5th Applied Electromagnetic Conference (AEMC), IIT Guwahati, Dec. 2015.
13. G. Arora, M. S. Hashmi, and A. Q. Ansari, "Current Differencing Buffered Amplifier (CDBA) based Current Mode Universal Fractional Order Filter", in National Conference on Microelectronics and Communications, BITS Pilani, Nov. 2015.
14. Y. D. Mishra, and M. S. Hashmi, "Power Integrity Simulation of High Speed I/O", in IEEE 29th International Conference on VLSI Design (VLSID), Kolkata, Jan 2016.
15. M. A. Maktoomi, and M. S. Hashmi, "A Novel Dual-Band Impedance Matching Scheme for Dual-Band Energy Harvesting Circuits Employing a Load- Modifier", in IEEE MTT-S 4th International Wireless Symposium (IWS), Shanghai, China, March 2016.
16. S. Singh, and M. S. Hashmi, "Exploring Fractional Order Elements for Single and Dual Band Impedance Matching for RF Applications", in IEEE 11th International Conference on Signal Processing and Communications (SPCOM 2016), 5 pp., IISc Bangalore.
17. S. Batra, P. Singh, S. Kaushik, and M. S. Hashmi, "Frequency Domain Analysis of On-Chip Power Distribution Network for Various Sub-System Topologies", in IEEE 20th International Symposium on VLSI Design and Test (VDATE 2016), 6 pp., IIT Guwahati.
18. P. Sharma, G. A. Kumar, and M. S. Hashmi, "Modeling and Yield Optimization of SRAM Sub-System for

Different Capacities Subjected to Parametric Variations” in IEEE 20th International Symposium on VLSI Design and Test (VDAT 2016), 6 pp., IIT Guwahati.

19. N. Batra, G. A. Kumar, M. S. Hashmi, A. Grover, and G. S. Visveswaran, “ESSAI PROGRAMMABLE: An Effective Test Methodology Enabling Detection of Weak bits in 28nm FDSOI SRAM”, in IEEE 20th International Symposium on VLSI Design and Test (VDAT 2016), 6 pp., IIT Guwahati.
20. D. Arora, and M. S. Hashmi, “A High Speed Low Voltage Latch Type Sense Amplifier for None-Volatile Memories”, in IEEE 20th International Symposium on VLSI Design and Test (VDAT 2016), 6 pp., IIT Guwahati.

#### Dr. Ojaswa Sharma

1. O. Sharma, and R. Tharayil, “Shape-aware MLS deformation for line handles”, in SIGGRAPH Asia 2015 Technical Briefs, p. 20. ACM, 2015.

#### Dr. P.B. Sujit

1. R. Alessandro, P. B. Sujit, A. P. Aguiar, and J. Sousa, “Optimal UAV Rendezvous on a UGV”, in AIAA Guidance, Navigation, and Control Conference, p. 0895, 2016.
2. S. Singh and P.B. Sujit, “Landmark based path planning in GPS denied areas”, in IFAC ACODS, Feb 2016
3. N. Sharma, J. Pinto and P.B. Sujit, “BugFlood: A fast path planning algorithm”, in AIAA InfoTech.

#### Dr. Ponnurangam Kumaraguru

1. Jain, P., and Kumaraguru, P. “On the Dynamics of Username Changing Behavior on Twitter”, Proceedings of the 3rd IKDD Conference on Data Science, 2016.
2. K. Lerman, M. Arora, L. Marin, P. Kumaraguru, and G. D. Emotions, “Demographics and Sociability in Online Interactions”, in the International Association for the Advancement of Artificial Intelligence (AAAI) Conference on Web and Social Media (ICWSM) 2016.
3. P. Jain, P. Kumaraguru, and A. Joshi, “Other Times, Other Values: Leveraging Attribute History to Link User Profiles across Online Social Networks”, in ACM Conference on Hypertext 2015.
4. A. Aggarwal and P. Kumaraguru, “What They Do in Shadows: Twitter Underground Follower Market”, in 13th Annual Conference on Privacy, Security and Trust (PST), 2015.
5. P. Dewan, and P. Kumaraguru, “Towards Automatic Real Time Identification of Malicious Posts on Facebook”, in 13th Annual Conference on Privacy, Security and Trust (PST), 2015.
6. N. Sachdeva, and P. Kumaraguru, “Online Social Networks and Police in India - Understanding the Perceptions, Behavior, Challenges”, in European conference on Computer-Supported Cooperative Work (ECSCW) 2015.

#### Dr. Pushpendra Singh

1. P. Arjunan, M. Srivastava, A. Singh, and P. Singh, “OpenBAN: An Open Building Analytics Middleware for Smart Buildings”, in proceedings of the 12th EAI International Conference on Mobile and Ubiquitous Systems: Computing, Networking and Services (MOBIQUITOUS’15), Pei Zhang, Jorge Sâ Silva, Nic Lane, Fernando Boavida, and André Rodrigues (Eds.). ICST (Institute for Computer Sciences, Social-Informatics and Telecommunications Engineering), ICST, Brussels, Belgium, Belgium, 70-79. DOI=<http://dx.doi.org/10.4108/eai.22-7-2015.2260256> [[ CORE Rank A ]]
2. P. Arjunan, H. D. Khadilkar, T. Ganu, Z. M. Charbiwala, A. Singh, and P. Singh, “Multi-User Energy Consumption Monitoring and Anomaly Detection with Partial Context Information”, in Proceedings of the 2nd ACM International Conference on Embedded Systems for Energy-Efficient Built Environments

(BuildSys '15). ACM, New York, NY, USA, 35-44. DOI=<http://dx.doi.org/10.1145/2821650.2821662> [[considered a premium venue for research in Energy ]]

3. S. Asthana and P. Singh, "Data Driven Usability: A Case for Adaptive Interfaces in Voice Based Menu Systems", in Proceedings of the 15th New Zealand Conference on Human-Computer Interaction (CHINZ 2015), Annika Hinze, David M. Nichols, and Masood Masoodian (Eds.). ACM, New York, NY, USA, 57-64. DOI=<http://dx.doi.org/10.1145/2808047.2808052>
4. G. Bajaj and P. Singh, "Sahyog: A middleware for mobile collaborative applications" in Proceedings of the 7th International Conference on New Technologies, Mobility and Security (NTMS). IEEE.
5. S. Asthana, P. Singh and S. Jain, "Adaptive framework for data transmission over GSM voice channel for developing regions" in Proceedings of the 7th International Conference on New Technologies, Mobility and Security (NTMS). IEEE

#### Dr. Rahul Purandare

1. A. Dhar, R. Purandare, M. Dhawan, and S. Rangaswamy, "CLOTHO: saving programs from malformed strings and incorrect stringhandling". ESEC/SIGSOFT FSE 2015: 555F566.
2. ShuktikaJain: Automated generation of programming language quizzes. ESEC/SIGSOFT FSE 2015:1051F1053.
3. VenkateshVinayakarao: Spotting familiar code snippetstructures for program comprehension.ESEC/SIGSOFT FSE 2015: 1054F1056

#### Dr. Richa Singh

1. D. Yadav, N. Kohli, P. Pandey, R. Singh, M. Vatsa and A. Noore, "Effect of Illicit Drug Abuse on Face Recognition", in Proceedings of IEEE Winter Conference on Applications of Computer Vision, March 2016 Received the Best Paper Award – CORE A Conference.
2. T. I. Dhamecha, P. Sharma, R. Singh, and M. Vatsa, "Discriminative Face Topics for Face Recognition via Latent Dirichlet Allocation", in Proceedings of IEEE Winter Conference on Applications of Computer Vision, March 2016. CORE A Conference.
3. S. Nagpal, M. Singh, R. Singh and M. Vatsa, "Regularizing Deep Learning Architecture for Face Recognition with Weight Variations", in Proceedings of IEEE International Conference on Biometrics: Theory, Applications and Systems, 2015.
4. A. Chahar, S. Yadav, I. Nigam, M. Vatsa, and R. Singh, "A Leap Password Based Verification System", in Proceedings of IEEE International Conference on Biometrics: Theory, Applications and Systems, 2015 Received the Best Poster Award.
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2. N. Singh, R. Jain and S. S. Ram, “Multiple slot array with near zero refractive index substrate”, in IEEE International Symposium on Antennas and Propagation, 2015.
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1. S. Singh, M. Gulati and A. Majumdar, "Greedy Deep Disaggregating Sparse Coding", in NILM Workshop 2016.
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## **Books**

#### Dr. Angshul Majumdar

1. “MRI: Physics, Reconstruction and Analysis” by A. Majumdar and R. K. Ward Ed, in CRC Press, 2015.
2. “Machine Intelligence” by R. Singh, M. Vatsa, A. Majumdar and A. Kumar Ed, in Signal Processing, Springer, 2015.

#### Dr. Mayank Vats

1. “Machine Intelligence and Signal Processing”, by R. Singh, M. Vatsa, A. Majumdar, A. Kumar, in Advances in Intelligent Systems and Computing, Vol. 390, Springer, 2016.

#### *Book chapters:*

1. “On the Importance of Frame Selection for Video Face Recognition, Advances in Face Detection and Facial Image Analysis”, written by T. I. Dhamecha, G. Goswami, R. Singh, and M. Vatsa, and Edited by M. Kawulok, M. EmreCelebi, and B. Smolka, Springer, 2015.
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#### Dr. Venkata M. Viswanath Gunturi

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## **Appendix B1 : Technologies and tools developed and deployed**

### **Technologies Developed/ Deployed at IIIT-Delhi in 2014-15**

- Developed an advanced version of the low power sensors to monitor snow petrels in collaboration with the Wildlife Institute of India (WII), Dehradun. The advanced version allows video surveillance of the nests. In addition the sensors deployed last year, were again used this year with great success due to their robustness and sturdiness. Currently the data is extracted and interpreted by WII.
- Swarath is our entry into the autonomous car competition by Mahindra. To test the developed algorithms for driverless cars, we purchased a e-rickshaw. In collaboration with the neighboring G.B. Pant Engineering College which has a mechanical workshop, the e-rickshaw was equipped with a drive by wire system, so that a computer is able to control it. Another positive side effect is that the relationship between IIIT and G.B. Pant has been strengthened through this project.
- An automated testing system for refurbished cell phones in collaboration with Overcart which is a company specialized for unboxed, but unused devices. The amount of returned items necessitated a system to test all aspects of the phone such as sensors, display, etc. Since each phone is different in design, size and functionality, the system needed to be general enough to accommodate any phone.
- Developed a solution that will help DRDO to understand How, What, When, and Where of the DRDO employees are talking about and what is being talked about DRDO. Installed this at the DRDO HQ and a copy of it will be left with the CAIR Lab, the funding lab for the CARS project.
- Facebook Inspector (Fbi), a REST API based browser plug-in for identifying malicious Facebook posts in real time. From the release date, Aug 2015, Fbi is downloaded over 2,500 times. Fbi received close to 3 million requests (both public and private posts), and out of these Fbi evaluated 1+ Million unique public posts.
- Facebook Profile Analyser. A tool that analyses a Facebook profile to give some interesting analysis like: the different posts done by the profile (status updates, pictures, links, etc.); top 9 profiles that has liked the most number of time of the input profile; yearly / monthly / weekly / daily activities; topics and location from the place where the profiles have posted. The system is publicly available at [precog.IIIT-Delhi.edu.in/fbanalysis](http://precog.IIIT-Delhi.edu.in/fbanalysis)
- Actively involved in developing an autonomous last-mile connectivity solution with others at IIIT-Delhi. The team is also a part of the Mahindra Rise Challenge. Please note that this is far from the deployment stage.
- A computational tool (combining kinetic Monte Carlo model and data analysis) is being developed that can be potentially applied to find optimal strategies in cancer therapy and for cancer subtype classification. Kinetic Monte Carlo simulations elucidate biology of cancer cells at the level of single cells and thus capture cell-to-cell stochastic fluctuations. Initial efforts elucidated optimal strategies based on use of affinity variant ligands and targeting susceptible network modules. Earlier studies (cancer therapy and subtype classification), based on analysis of large-scale genomic and clinical data, have paved the way for personalized medicine. We showed how dynamical approaches, which capture single cell kinetics (such as kinetic Monte Carlo studies), provide insights into biological mechanisms (such as generation of cancer chemoresistance) and may also help integrate large-scale data for designing rigorous disease subtype classification schemes and therapeutic approaches.
- Cuff-less continuous BP monitoring device prototype is presented to the funding agency ITRA and it was highly appreciated. We also have preliminary B-Plan ready and exploring the possibility of either licensing it out or a start-up.
- A device and system for biometric template protection” Application NO: 1917/DEL/2015: a new technique of generating templates from fingerprint images provides a very efficient matching process using a simple hamming distance.

## **Appendix B2 : Patents have been granted or applied for:**

- Patent No.: US Patent 9,042,498  
Title: DM-CM diversity receiver for a wireline communication system LF Alloin  
Investors: P Biyani, L Pierrugues, SM Zafaruddin, CV Kumar  
Status: Granted
- Patent No.: US 9285218 B2  
Title: Shortest Travel Path Determination Using Critical Start Time Points  
Investors: Shekhar, S., Gunturi, V., Yang, K.S. (outside IIIT Delhi work)  
Status: Granted
- Patent No.: US Patent Allowed (Sept. 2014), No. US8841922 B2.  
Title: Passive Source and Load-Pull Architecture for High Reection Factor Synthesis  
Investors: F. M. Ghannouchi, S. Bensmida, M. S. Hashmi, and M. Helaoui  
Status: Granted
- Application No.: 2007/DEL/2014, Date of filing: January 2016  
Title: A novel system and method for person Identification and personality assessment based on EEG signal  
Inventors: Puneet Agarwal, Siddharth Panwar, ShivDutt Joshi, Anubha Gupta  
Status: Filed
- Application No.: 2007/DEL/2014, Date of filing: January 2016  
Title: A novel system and method to diagnose and Predict different systemic disorders and mental states  
Inventors: Puneet Agarwal, Siddharth Panwar, ShivDutt Joshi, Anubha Gupta  
Status: Filed
- Application No.: 1917/DEL/2015, Date of filing: June 2015  
Title: A Device and Systems for Biometric Template Protection: a new technique of generating templates from fingerprint images provides a very efficient matching process using a simple hamming distance  
Inventors: Dong Hoon Chang, Surabhi Garg, and Neha Gupta  
Status: Filed
- Title: Generic Tri-Band Impedence Transformation Network for RF/ Microwave Active and Passive Circuits, Components and Systems  
Inventors: M.S. Hashmi and Md. Ayatullah Maktoomi Status: Filed
- Title: Systematic Procedure for Multi-frequency DC- Feed Design, Indian Patent Inventors : M. A. Maktoomi and M. S. Hashmi

Status: in the filing process

- Application No: P5680. United States Patent Office, filed in 2015  
Title: A method for Auditing and Augmenting User generated Tags for Digital Content.  
Inventors: Payal Bajaj, and the team at Adobe
- Status: Patent pending Application No.: P5690. United States Patent Office, filed in 2015  
Title: Monitoring Social Media for Breach of Organizational Privacy.  
Inventors: Balaji Srinivasan and team at Adobe  
Status: Patent pending
- Application No.: 5229/CHE/2015  
Title: Algorithms for Near-Optimal Discontinuous Operation in Inventors: G.Fast Pravesh Biyani  
Status: Filed

## Appendix C : Sponsored Research Projects

### New Projects

Sl No	Title of the Project	Start Date	Project Duration	Name of the PI	Funding Agencies	Value of Project
1	Mobile-based Diagnosis of Sleep Apnea	1/1/2015	3 years	Dr. Vinayak Naik	DST-SERB	51,01,000.00
2	Google Award for School	4/4/2015	NA	Prof. Pankaj Jalote	Google	9,50,000.00
3	Using Online Social Media for Intelligence Gathering	26/06/2015	6 months	Dr. Ponnuram Kumaraguru	MHA (IB)	6,36,000.00
4	FIST	20/08/2015	5 years	Prof. Pankaj Jalote	DST	1,00,00,000.00
5	Green Communication Technology for Multi Standard and Multi-band transceivers	11/9/2015	3 Years	Dr. Vivek Bohara	UGC	12,39,500.00
6	DST Inspire	29/09/2015	5 Years	Dr. Sumit Darak	DST	35,00,000.00
7	Preventing & Treating HIV Comorbidities in India: Multi-Tiered Strategy For Women	15/11/2014	20 months	Dr. Mona Duggal/ Dr. Puspendra Singh	Yale University	11,47,203.00
8	Feasibility study of development of non Linear GaN HEMT model for SSPL Devices	10/11/2015	1 Year	Dr. Mohammad S Hashmi	CARS: DRDO	9,60,000.00
9	Joint Research between EMC & IIIT-Delhi	10/11/2015	1 Year	Dr. Ponnuram Kumaraguru	EMC Data Storage System India Pvt. Ltd	9,60,000.00
10	Mechanism, Impact and Scenario Analysis	5/11/2015	18 months	Dr. Ponnuram Kumaraguru	CARS: DRDO	9,00,000.00
11	ISEA Project Phase-II	3/12/2015	1 Year	Dr. Ponnuram Kumaraguru	CDAC	36,06,000.00

Sl No	Title of the Project	Start Date	Project Duration	Name of the PI	Funding Agencies	Value of Project
12	Integrating open sources intelligence from traditional sources and online social networks for Intelligence gathering	28/01/2016	30 Months	Dr. Ponnuram Kumaraguru	DeitY	1,68,70,000.00
13	SRP-Irisys Company Ltd	1/1/2016	1 Year	Dr.Donghoon Chang	Irisys Company Ltd	12,65,026.00
14	IBM India	22/02/2016		Dr.Mayank Vatsa	IBM	90,000.00
					<b>Total</b>	<b>4,62,84,229</b>

### Consultancy Projects 2015 – 2016

All the funds from funding Agency are received.

Sl No	Title of the Project	Name of the PI	Funding Agencies	Total Sanction Amount ₹
1	Technical Consultancy to Central Board of Excise & Customs	Dr. Vinayak Naik & Dr. Pushpendra Singh	Central Board Excise & Customs	10,00,000.00
2	CRM-DMS for Indian Oil Corporation	Prof. Pankaj Jalote	Indian Oil Corporation	2,50,000.00
3	IEEE -Website Consultancy	Dr. Richa Singh	IEEE	3,92,340.00
4	IEEE -Website Maintenance Consultancy	Dr. Richa Singh	IEEE	1,96,170.00
5	VMWARE consultancy	Dr. Vinayak Naik	VMware	1,00,000.00
6	USB-Korea Consulancy	Dr. Donghoon Chang	Irisys Company Ltd	4,43,171.00
7	IEEE Consultancy	Dr. Mayank Vatsa	IEEE	4,00,380.00
8	SPMCL Consultancy	Dr.Vikram Goel & Dr.Chetan Arora	SPMCL	2,50,000.00
9	Teracom Project	Dr.P.B.Sujit	Kritical Solutions	4,20,000.00
			<b>Total</b>	<b>34,52,061.00</b>

## Ongoing Projects

Sl No	Title of the Project	Start Date	Project Duration	Name of the PI	Funding Agencies	Value of Project
1	DST/INSPIRE Faculty Award/2012	01.02.2013	5 years	Dr. Angshul Majumdar	DST	3,500,000.00
2	DST/INSPIRE Faculty Award/2012	01.02.2013	5 years	Dr. Sujay Deb	DST	3,500,000.00
3	DST/INSPIRE Faculty Award/2012	29.11.2012	5 years	Dr. Pravesh Biyani	DST	3,500,000.00
4	Research and Exploration in Support of the proposed Project Title Use of cell phone for detecting and Controlling Infectious Diseases from National Geographic Society	09.01.2012	1year	Dr. Vinayak Nayak	National Geographic Society	986,960.00
5	Smartphone-Based Anolalous Human Activity Detection & Prediction	29.04.2013	3 years	Dr. Sanjit Kaul	DST-SERB	19,84,800.00
6	Dynamical Analysis on the Functional relationship between circadian rlythms & memory formation to understand post-traumatic memories in human	19.10.2013	3 years	Dr. Sriram K	DST	1,589,000.00
7	DST/INSPIRE Faculty Award/2013	21.10.2013	5 years	Dr. Shobha Sundar Ram	DST	3,500,000.00
8	StandFord University "Fractions to Millions"	03.10.2013	NA	Dr. Pushpendra Singh	Standford University	791,960.00
9	EMC: Development of distributed algorithms for incremental Sensing Communication	22.10.2013	1year	Dr. Amarjeet Singh	EMC Data Storage System India Pvt. Ltd	960,000.00
10	Human Sense: Towards contex aware sensing,inference and actuation for applications in Energy and Healthcare	12.11.2013	3 years	Dr.Pushpendra Singh	ITRA	18,441,000.00

Sl No	Title of the Project	Start Date	Project Duration	Name of the PI	Funding Agencies	Value of Project
11	Adobe Award	11.02.2014	NA	Dr.Ponnurangam Kumaraguru	Adobe	500,000.00
12	VOX-Fp&POL-Violent Online Political Extremism “Networking of Researchers for a High Level Multi-Organisational & Cross-Border Collaboration – Network of Excellence”	01.03.2014	60 months	Dr.Ponnurangam Kumaraguru	UK	363,258.00
13	Nokia Lokalization	2015	NA	Dr.Vinayak Naik	Nokia	1,152,084.00
14	Nokia Health	2015	NA	Dr.Vinayak Naik	Nokia	631,111.00
15	Research on Multimodal Context Switching Using Multispectral Face, Periocular and Iris Recognition at a Distance	28.06.2014	36 months	Dr. Mayank Vatsa	DeitY	12,055,000.00
16	Small Cell WiFi Networks For The Enterprise	25.07.2014	36 months	Dr. Sanjit Kaul	DeitY	8,834,000.00
17	Design Innovation Centre	06.08.2014	4 years	Prof. Pankaj Jalote	IIT Delhi/ MHRD	13,000,000.00
18	DST-INRIA programme” proposal Personalized Mobility Service for Urban Travellers”	01.09.2014	3 years	Dr. Pushpendra Singh	DST- CEFIRA	514,722.00
19	DST/INSPIRE Faculty Award/2014	29.08.2014	5 years	Dr. Arnab Bhattacharjee	DST- INSPIRE	3,500,000.00
20	AUV object Detection and identification using Sonar	23.09.2014	1 year	Dr. P. B Sujit	NRB	1,290,000.00

Sl No	Title of the Project	Start Date	Project Duration	Name of the PI	Funding Agencies	Value of Project
21	Design and Development of Leukoanalyzer , an Automated Computer Assisted Tool for Minimal Residual Disease Estimation (MRD) in B-lineage Acute Lymphoblastic Leukemia(ALL) using Image Processing Techniques.	15.10.2014	3 years	Dr. Anubha Gupta	DeitY	2,831,000.00
22	Design and development of Digital Multimedia Forgery Detection system	15.10.2014	3 years	Dr. A. V. Subramanyam	DeitY	4,980,000.00
23	A low cost and easy to use cuff-less blood pressure measuring device using pulse transit time and preejection period	05.11.2014	3 years	Dr. Sujay Deb	INDO-US S&T (DST)	4,094,000.00
24	Creating Course Content for Privacy and Security in Online Social Media	04.12.2014	NA	Dr. Ponnurangam Kumaraguru	Intel Corporation	1,219,495.00
25	Mobile-based Diagnosis of Sleep Apnea	01.04.2015	3 years	Dr. Vinayak Naik	DST-SERB	5,101,000.00
26	Google Award for School	04.06.2015	NA	Prof. Pankaj Jalote	Google	950,000.00
27	Using Online Social Media for Intelligence Gathering	25.06.2015	6 months (extendable)	Dr. Ponnurangam Kumaraguru	MHA (IB)	636,000.00
28	Green Communication Technology for Multi Standard and Multi-band transceivers	11.09.2015	3 years	Dr. Vivek Bohara	UGC	1,239,500.00
29	DST-INSPIRE	21.09.2015	5 years	Dr. Sumit Darak	DST	3,500,000.00
30	Preventing & Treating HIV Comorbidities in India: Multi-Tiered Strategy For Women	30.10.2015	NA	Dr. Mona Duggal/ Dr. Puspendra	Yale University	1,147,203.00

Sl No	Title of the Project	Start Date	Project Duration	Name of the PI	Funding Agencies	Value of Project
31	Formulation of Modeling Strategy Of SSPL GAN-HEMT based on Non-Linear measurement data	10.11.2015	1 year	Dr. Mohammad S Hashmi	CARS: DRDO	960,000.00
32	Joint Research between EMC & IIIT-Delhi	10.11.2015	1 year	Dr. Ponnuram Kumaraguru	EMC Data Storage System India Pvt. Ltd	960,000.00
33	Mechanism, Impact and Scenario Analysis	5.11.2015	18 months	Dr. Ponnuram Kumaraguru	CARS: DRDO	900,000.00
34	Integrating open sources intelligence from traditional sources and online social networks for Intelligence gathering	28.01.2016	30 months	Dr. Ponnuram Kumaraguru	DeitY	16,870,000.00
35	SRP-Irisys Company Ltd	01.01.2016	12 months	Dr.Donghoon Chang	Irisys Company Ltd	1,167,107.00
36	IBM	22.02.2016	NA	Dr.Mayank Vatsa	IBM India	90,000.00
37	Low cost high resolution cadastral map generation using UAV (Phase-1)	03.08.2016		Dr.P B Sujit	PEC University of Technology	1,270,560.00
					<b>Total</b>	<b>130,130,960.00</b>

## Other Sponsorship

Fellowship head	No. of students	Fellowship amount(per month)	Contingency (per year)	Total funds received per year(in ₹)
Visvesvaraya (for 1st & 2nd Year)	23	31500	30,000	93,84,000
Visvesvaraya (for 3rd , 4th & 5th year)	0	35000	30000	0
TCS (for 1st & 2nd Year)	8	28000	25000	28,88,000
TCS (for 3rd & 4th Year)	15	32000	25000	61,35,000
CSIR (for 1st & 2nd Year)	1	25000	12000	3,12,000
CSIR (for 3rd , 4th & 5th year)	1	28000	20000	3,56,000
UGC (for 1st & 2nd Year)	2	25000	12000	6,24,000
UGC (for 3rd , 4th & 5th year)	0	28000	20000	0
<b>Total</b>				<b>1,96,99,000</b>

## Appendix D : Faculty Collaborations

### Industry Collaborations

- Collaboration with Rameshwar Pratap, TCS Innovation Labs, Delhi NCR on a non-funded project.
- Adobe Bengaluru. Through the Faculty Research Award.
- Prof. Pedro Barquinha, CENIMAT, FCT, UNL, Lisbon, Portugal.
- Dr. Mohan Dhawan (IBM IRL Delhi) and Dr. Subodh Sharma (IIT Delhi),
  - Thread safety of libraries
  - Automatic program repair
  - Exception analysis
- Mohan Dhawan, IBM Research, New Delhi. – Worked on TASVEER project.
- Engaged with Ingersol Rand (Bangalore). They were interested in our proposal of autonomous last-mile connectivity (entered as project SWARATH in the Mahindra Rise Challenge).
- Continental AG has provided support for our entry in the Mahindra Rise challenge by providing us with their short range automotive RADA<sup>®</sup>. They are interested in the performance evaluation of RADAR(s) in Indian conditions.

### Academic Collaborations

#### **Dr. Anand Srivastava**

- Academic collaboration with Prof Keith Blow of Aston University under Erasmus Mundus Fellowship [visiting Scholar to Aston University, UK, June/July 2015].
- Working with Prof Byrav Rammoorthy of UNL to be co-guide for one of my PhD student.

#### **Dr. Anubha Gupta**

- Prof. Ritu Gupta (AIIMS, Delhi)- Deity funded project on development of Leuko-analyzer (Microscopic Image Analysis)- 46.77 lakh.
- Prof. Ajay Garg (AIIMS, Delhi)- fMRI signal and image processing, two students, discussion over phone, bi-monthly visits to AIIMS, New Delhi.
- Dr. Ananya Sen Gupta (University of Iowa, USA) - Signal Processing for Underwater Communication, one student, Regular weekly Skype meetings, visited University of Iowa in Dec. 2015.
- Prof. S.D. Joshi (IIT Delhi)- EEG Signal Processing, one PhD student, regular weekly meetings at IIT Delhi.
- Dr. Vimal Bhatia (IIT Indore)- UWB communication, one PhD student, regular weekly Skype meetings, two visits by Dr. Bhatia to IIIT-Delhi last year.

#### **Dr. A.V. Subrayamanyam**

- Collaborative work with National University of Singapore and Kuwait University.  
Collaborators: Professor Mohan Kankanhalli, School of Computing, National University of Singapore, Singapore and Dr. Sabu Emmanuel, Assistant Professor, Computer Engineering, Kuwait University, Kuwait.

#### **Dr. Debajyoti Bera**

- Collaboration with Subhamoy Maitra, CoEC, ISI Kolkata on a non-funded project.

#### **Dr. Mayank Vasta**

- Prof. Kevin Bowyer University of Notre Dame

- Prof. Afzel Noore, West Virginia University

**Dr. Mohammad S.Hashmi**

- Prof. Fahdel M. Ghannouchi (University of Calgary, Canada) - development of multi-band circuits and components for SDR application.
- Prof. Ramesh Pokharel (Kyushu University, Japan) - on-chip antenna techniques.
- Prof. Jaleel Akhtar (IIT Kanpur) - Low Cost 1-port Vector Network Analyzer.
- Prof. Paul J. Tasker (Cardi\_ University, UK) - Advanced RF Measurement Techniques
- Mr. M. Sohaib(Director, Siways Microelectronics) - Cost E\_ective WiFi Booster

**Dr. P.B Sujit**

- Manu Korilla, NSTL, DRDO: Interested to propose a multi-use surface vessel for sea operations.
- Proposal to be submitted to NRB, DRDO
- Qamar Qureshi, WII: Interested in wild life mapping, habitat mapping for Tigers and Dolphin localization. Proposals to be submitted to MoES and Ministry of Forest and DST.

**Dr. Ponnurangam Kumaraguru**

- Georgia Tech. Prof. Munmun Choudhary. Online Social Media.
- EMC2 / RSA. Through the research grant.

**Dr. Pravesh Biyani**

- Dr James Hogan, QUT, Australia, Machine Learning for Genomic Sequence comparison.
- Dr Akshay Soni, Yahoo Research, CA
- Dr Henk Wymeersch, Chalmers University, Sweden, Optimization for Communications
- Dr. Surendra Prasad, IIT Delhi

**Dr. Pushendra Singh**

- Mobile Healthcare, Prof. Nancy Reynolds, Yale University, USA, . Prof. Allison Shorten, Yale University, USA, Dr. Bhanu Duggal, JJ Hospital, Mumbai, Dr. Mona Duggal, PGIMER, Chandigarh, Dr. Meenu Singh, PGIMER, Chandigarh, Dr. Prabha, NIMHANS, Bengaluru.
- IVR+Mobile Systems, Prof. Patrick Olivier, Newcastle University, UK, Dr. Madeline Balaam, Newcastle University, UK .
- Personalized Mobile Services, Prof. Valerie Issarny, Inria, France, Prof. Nikolaos Gregontas, Inria, France , Dr. Animesh Pathak, Inria, France

**Dr. Pydi Ganga**

- Prof. Joao Goes and Dr. Asal Kiazadeh, UNINOVA, FCT, UNL, Lisbon, Portugal
- Vitor Grade Tavares, INESC-TEC, Porto, Portugal

**Dr. Ojaswa Sharma**

- Dr. Archana Mantri (Chitkara University), Developing Augmented Reality Teaching Aids for Engineering Education.

**Dr. Rahul Purandare**

- Only with Subodh Sharma
- Communication deadlocks in MPI programs
- With Subodh Sharma and Dr. Matt Dwyer

- Runtime Verification under Lossy Conditions
- Dr. Anita Sarma (University of Oregon, USA)
- Automatic programming quiz generation
- Dr. Geoffrey Nellisen and Dr. David Pareira (University of Porto, Portugal)
- Runtime Verification of Real Time Systems
- Dr. Aditya Kanade (Indian Institute of Science, India)
- Automatic Feedback System for Programming Assignments
- Dr. Sebastian Elbaum (University of Nebraska Lincoln, USA)
- Analysis of Distributed Robotic Systems

#### **Dr. Rajiv Raman**

- Saurabh Ray, NYU Abu Dhabi – research visit Oct 2015.
- Satish Govindarajan, IISc Bangalore.
- Nabil Mustafa, University Paris-Est

#### **Dr. Richa Singh**

- Prof. Afzel Noore, West Virginia University, USA
- Prof. Kevin Bowyer University of Notre Dame, USA
- Dr. Nalini Ratha, IBM TJ Watson Research Center, USA

#### **Dr. Saket Anand**

- Continuing the collaboration in the area of Systems Engineering for Computer Vision with Prof. Visvanathan Ramesh at University of Goethe, Germany. “Autonomous Shuttle for Last Mile Connectivity”.
- Continental AG has provided support for our entry in the Mahindra Rise challenge by providing us with their short range automotive RADA€

#### **Dr. Sujay Deb**

- Dr. Amlan Ganguly, Rochester Institute of Technology, “Interference aware wireless NoC design”.
- Dr. Manoj K. Das, “The INCLIN Trust, Cuffless BP monitor”.
- Dr. Pratha Pande, Washington State University, “Low power NoC design”.

#### **Dr. Sumit Darak**

- Christophe Moy, “Opportunistic spectrum access for decentralized network”.

#### **Dr. Viswanath. Gunturi**

- Prof William Northrop and Prof Shashi Shekhar from University of Minnesota.

#### **Dr. Vinayak Naik**

- “Diagnosis of Sleep Apnea,” Prof. Sharma (Head of Internal Medicine), Prof. Sinha, and Prof. Soneja from AIIMS, New Delh Prof. Behera and Prof. Dhooria from PGIMER, Chandigarh .

#### **Dr. Vivek Bohara**

- Dr. Mazen Abi Hussein and Prof. Olivier Vernard of ESIEE Paris (University of Paris, East) , ““Multi-Stage DPD architecture for Multi Standard Wireless Transceivers”.
- Dr. Prof. Daniel Benevides da Costa of Federal University of Ceará (UFC), “Energy harvesting protocols”

## **Appendix E :Participation of faculty in National & International Seminars & Invited Speakers**

### **Dr. Alexander Fell**

- Speaker at a workshop organized by the Coimbatore Institute of Technology. The topic of the talk was about Compiling Techniques for Coarse-Grained Reconfigurable Architectures”. (26 Nov 2015)
- Distinguished guest and keynote speaker for the 2<sup>nd</sup> International Conference on Research Innovations in Engineering & Technology (ICRIET) at the Maharaja Agrasen Institute of Technology (7<sup>th</sup> April 2016)

### **Dr. Anand Srivastava**

- Expert Lecture on Li-Fi at JSS Academy Noida
- Lectures at Aston Univ, Birmingham, UK as part of Erasmus Mundus Fellowship
- Panel member of one of the sessions in IEEE ANTS 2015

### **Dr. Angshul Majumdar**

- “Compressed Sensing”, Indian Institute of Engineering, Science and Technology, March, 2016.
- “Representation learning”, IEEE ComSoc Kolkata Chapter lecture, January, 2016.
- “Representation Learning”, Indian Statistical Institute, December, 2015.
- “Mathematical Modeling in MRI Reconstruction”, National Seminar on Recent Trends in Signal Processing, IEEE Gujrat Section, October, 2015.
- “Introduction to Deep Learning” & “Collaborative Filtering”, Workshop on Compressive Sensing, MNIT, September, 2015.

### **Dr. Anubha Gupta**

- Guest Lecture on Brain Networks- University of Iowa, USA, Dec. 10, 2015
- Guest Lecture on Brain Networks - Iowa State University, USA, Dec. 11, 2015
- Guest Lecture on fMRI signal processing, MNIT Jaipur, Sep. 12, 2015
- Guest Lecture on Centers of Excellence in Teaching and Learning: Do we need these?” in Faculty Development Program, J.P. Institute of Engineering, Noida, July 8, 2015.

### **Dr. A V Subramanyam**

- Seminar on Multimedia Security, Delhi Technological University, Delhi, India
- Seminar on Image and Video Forensics, MMCOE, Pune, Maharashtra, India
- Speaker in Workshop on Computer Security Technical Exchange jointly organized by Cybersecurity Education and Research Center, IIIT-Delhi and Oak Ridge National Laboratories, USA at IIIT-Delhi.

### **Dr. Chetan Arora**

- Taught a 3-weeks (1-credit) course at IIT Mandi on Machine Learning for Computer Vision. 22. Registered students along with multiple sit-through PhD, MTech and Faculty members.
- Invited talk at Continental, Bangalore on Egocentric Vision, January 2016.
- Gave lectures for FDP at Nirma Institute, Ahmedabad. June 2015.

### **Dr. Dong Hoon Chang**

- Invited Lecture, “Authentication Mechanism”, Delhi Technical University, 20 January, 2016.
- Invited Lecture, “Challenges, Issues of Modern Cryptography”, ISM Dhanbad, 3-5 March, 2016.
- Invited Lecture, “Biometric Security”, MAIT, Maharaja Agrasen University, 8 April, 2016.
- Panel Speaker, End User Control Session 1200 – 1300 on Dec 17, AISS 2015

**Dr. Debajyoti Bera**

- Invited lecture at Workshop for Teachers of Computer Science in Schools, August 2015 on File Handling.
- Invited lecture at QANSAS 2015, Agra on Quantum Computing.

**Dr. Mayank Vatsa**

- Machine Learning in Biometrics, Samsung, Advanced Technology Labs, Bangalore, December 2015
- Machine Learning in Biometrics, Xerox Research Center India, Bangalore, Dec 2015
- Machine Learning in Biometrics, IBM India Research Labs, Bangalore, Dec 2015
- Introduction to Deep Learning, CSE/MNIT National Workshop on Machine Vision and Biometrics, October 2015
- Introduction to Biometrics, CSE/MNIT National Workshop on Machine Vision and Biometrics, October 2015

**Dr. Mohd. Hashmi**

- Tutorial organizer at IEEE MTT-S International Microwave and RF Conference (Hyderabad) 2015.
- Tutorial speaker at IEEE MTT-S International Microwave and RF Conference (Hyderabad) 2015.
- Organized 5-day (July 22-26, 2015) RF Design Workshop at IIIT Delhi. It was sponsored by Keysight Inc. and Tektronix Ltd. The attendees were mainly faculty members and research scholars. Over 100 participants attended this workshop.
- Organized 1-day MATLAB Workshop sponsored by Math Works at IIIT Delhi on 2<sup>nd</sup> April 2016. Over 60 participants attended this workshop.
- Organized TI Analog Design Competition for North Zone, October 2015.
- Delivered an invited talk titled “Circuits and Devices for mmW and THz Wireless Communications”, during IEEE MTT-S workshop on THz and Imaging Systems at IIT Kanpur, on 18<sup>th</sup> Feb 2016.
- Delivered an invited talk titled “Transmission Line based Dual-Band Passive Components”, during UGC sponsored workshop at AMU on 13<sup>th</sup> Feb 2016.
- Delivered an invited talk titled “Nonlinear RF Instruments for RF Power Amplifier Characterization and Optimization”, during UGC sponsored workshop at AMU on 13<sup>th</sup> Feb 2016.
- Delivered an invited talk titled “Dual-band Circuits for Software Defined Radio Applications”, during DST sponsored workshop at Galgotia Engineering College on 25<sup>th</sup> Feb 2016.
- Delivered a lecture titled “Advanced Instruments for Design of PAs/Transmitters for High Frequency Applications”, at New York Institute of Technology, Nanjing Campus, 7<sup>th</sup> Dec 2015.
- Delivered an invited talk titled “Advanced in Nonlinear Measurement Techniques”, at SSPL-DRDO on 17<sup>th</sup> August 2015.
- Delivered a lecture titled “GaN Device Characterization Techniques”, during target training workshop at SSPL-DRDO on 11<sup>th</sup> June 2015.
- Delivered an invited talk titled “Waveform Engineering and its Applications”, during AICTE sponsored seminar on High and Low Frequency Devices and Systems at Maharaja Agrasen Institute of Technology Delhi on 16<sup>th</sup> Oct 2015.

**Dr. P B Sujit**

- Talk at Robotics Research Center, IIIT Hyderabad on 11 Mar 2016.
- Talk at Robotics Laboratory, Hiroshima University, Hiroshima, Japan on 29 Feb 2016.
- Talk at Department of Aerospace Engineering, IIT Kanpur on 10 Feb 2016.

### **Dr. Ponnurangam Kumaraguru**

- Continued Education Programs– Instructor: Organized more than 3 CEPs this year in campus on Using Online Social Media for Policing, Intelligence, Investigation, and Law & Order.
- With Great Online Power Comes Great Responsibility. April 12, 2016.
- Privacy and Security in Online Social Media. IIIT Hyderabad. March 23, 2016.
- Privacy and Security in Online Social Media. Bharati Vidyapeeth College of Engineering, New Delhi. ACM India Eminent Speaker talk. Feb 17, 2016.
- Privacy and Security in Online Social Media. As part of Microsoft Academic Research Summit, Pune. Jan 30, 2016.
- Privacy and Security in Online Social Media. As part of the Annual conference of National Knowledge Network, Hyderabad. Jan 21, 2016.
- Online Social Media - Opportunities, Pitfalls and Challenges. National Conference of Women Police: Looking Ahead. Nov 24, 2015. Kerala Police, Trivandrum.
- Mitigating Misinformation Spread on Micro-blogging Web Services using Tweet Cred. Workshop on Social Media in Communication, Governance and Security, 5 – 6 November 2015, Singapore.
- Privacy and Security in Online Social Media. ITM University, Gurgaon. ACM India Eminent Speaker talk. Sept 13, 2015.
- Privacy and Security in Online Social Media. As part of the a short-term course Cryptology and Information Security (CIS 2015), organized by Scientific Analysis Group (SAG), Defence Research and Development Organisation (DRDO), Government of India. Sept 9, 2015.
- Privacy and Security in Online Social Media. Security and Hacking Conference, COCOn 2015. Organized by Kerala Police. Aug 20, 2015.
- Privacy and Security in Online Social Media. C4: Conference on Cyber Crime Control. Organized by Mumbai Police. July 28, 2015.
- Privacy and Security in Online Social Media. IIM Bangalore. As part of their regular seminar series. July 24, 2015.
- Privacy and Security in Online Social Media. Infosys Bengaluru. ACM India Eminent Speaker talk. July 22, 2015.
- Privacy and Security in Online Social Media. International Institute of Information Technology (IIIT) Bengaluru. ACM India Eminent Speaker talk. July 22, 2015.
- Privacy and Security in Online Social Media. IBM IRL, Bengaluru. July 21, 2015.
- Privacy @ ICICI. ICICI Head Quarters, Mumbai. June 26, 2015.
- Research @ Precog. Flipkart, Bengaluru. June 22, 2015.
- Online Social Media Labs. As part of Seminar on “IT Applications in Indian Police”. National Police Academy, Hyderabad. June 19, 2015.
- Safe Technology Usage. G. D. Goenka Public School. As part of National Technology Day, May 11, 2015.

### **Dr. Pravesh Biyani**

- Talk on “Small cell Wi-Fi network optimization” at Chalmers University, Sweden and in KTH, Stockholm, Sweden.
- Invited talk on “Big Data Informatics for Mobility” at CAETS Convention, New Delhi.
- Invited talk at “Samvaad 2016” by the Govt. of Delhi on the problems in Transportation

### **Dr. Rahul Purandare**

- Served as an external examiner for the comprehensive examination of an IIT Ropar student

**Dr. Rajiv Raman**

- Served as an external examiner for the comprehensive examination of an IIT Ropar student.
- Invited lecture at Workshop for School Teachers on pointers, stacks & queues, Aug 2015.

**Dr. Richa Singh**

- Machine Learning in Biometrics, Samsung, Advanced Technology Labs, Bangalore, December 2015
- Machine Learning in Biometrics, Xerox Research Center India, Bangalore, December 2015
- Machine Learning in Biometrics, IBM India Research Labs, Bangalore, December 2015
- Semi-supervised Learning, CSE/MNIT National Workshop on Machine Vision and Biometrics, October 2015
- Introduction to Face Recognition, CSE/MNIT National Workshop on Machine Vision and Biometrics, October 2015

**Dr. Saket Anand**

- Invited lecture on Epipolar Geometry at Workshop on Computer Vision: Techniques and Applications, March 17-19, 2016, College of Engineering, Karunagappally, Kerala

**Dr. Sambuddho Chakravarty**

- M.Tech thesis committee of Pradyumna Nand, April 2016
- Helped with organization and running of CERC annual security event, February 2016.

**Dr. Shobha S Ram**

- Conference Tutorial, with Dr. V. C. Chen, 2016 IEEE Radar Conference on Advances of applications of radar micro-Doppler Signatures

**Dr. Somitra S Sanadhya**

- Password hashing. Department of Comp. Sc. and Engg, IIT Gandhinagar, 7 May 2016
- Security and privacy for cloud computing. ISO/JTC SC 27 group, Telecommunications Standards Development Society, India (TSDSI), New Delhi 27-Apr-2016.
- Password security, WEP security. National workshop on Cryptology, Central University of Rajasthan, 8 Apr 2016.
- Lattice based cryptography. Short term course on Cryptology, NIT Patna, 17 Feb 2016
- Crypto v2.0: Big brother knows what you did last summer. Academic conclave. St. Stephen's college, Delhi University, 12 Feb 2016.
- Design and cryptanalysis of hash functions, R. C. Bose Center on Cryptology and Security, ISI Kolkata, 30, 31 Jan 2016.
- Design and analysis of block ciphers. CDAC Noida. 2, 4, 6 Jan 2016.
- Series of lectures on (a) Block ciphers, (b) HMAC security, (c) Secret Sharing at National Workshop on Cryptology, LNMIIT Jaipur, 14-20 Dec 2015.
- Mathematics in PKC, Workshop on Mathematics and its applications. Dept. of Mathematics, Shivaji College, Delhi University, 27 Oct 2015.
- Cryptology: theory and practice, Academic Staff College, JNU New Delhi, Sept 2015.
- Design and analysis of hash functions, National workshop on Cryptology. KIIT Bhubaneswar, Orissa, Sept 2015.

**Dr. Sujay Deb**

- Panelist in a panel discussion on "Advances in MedTech and relevance to India" in NetHealth Workshop on 9th January 2016.
- Invited lecture on "Network-on-Chip communication fabric for many core processors" at NIT Agartala on

9 November, 2015.

- Session chairs at VDAT 2016, IGSC 2015.

**Dr. Sumit Darak**

- Presentation on “Decision making policy for RFEH enabled CRs in decentralized networks” at CentraleSupélec, France
- Lecture on “Career in Research” at Research Showcase Day, NIT Delhi

**Dr. VMV Gunturi**

- Invited talk at TCS research, Gurgaon, on “Investigating Spatial Big Data for Next Generation of Routing Services”

**Dr. Vikram Goyal**

- Invited talk at RICSIT 2016, HPU Shimla on 23<sup>rd</sup> May 2016.
- Invited talk on the topic of “Design Patterns for Big Data Processing on Map-Reduce Framework” in the workshop on Big Data Analytics at IIT Mandi, 7<sup>th</sup> May 2016.
- Tutorial on Detecting Fake Indian Currency Notes using Machine Learning Algorithms and Image Processing Techniques at CNP Nasik on 30<sup>th</sup> April 2016.
- Keynote talk at “Recent Innovations in Engineering and Technology” at Maharaja Agrasen University, Chandigarh on March 23<sup>rd</sup>, 2016.
- Invited talk at “Emerging Trends in Computer Science and Communication Engineering” conference, Chandigarh University on March 21<sup>st</sup> 2016.
- Expert lecture on Privacy Enhanced Location - based Access Control at EICT and ISEAP sponsored Faculty Development Program on Database Security, NIT Warangal on Mar 5<sup>th</sup> 2016.
- Tutorial talk on “Open Source Social Media Analytics for Intelligence and Security Informatics Applications” at 4<sup>th</sup> International Conference on Big Data Analytics, Hyderabad December 2015.
- Expert Lecture at Workshop on Introduction to Tools and Techniques for Big Data Analysis, IIT Roorkee, on Dec 5, 2015

**Dr. Vinayak Naik**

- Invited to give a talk titled “Scalable SDN” at Faculty Development Program on SDN on Mar 21-22, 2016 at MNIT, Jaipur
- Invited to give a talk at VMware R&D Innovation Offsite (RADIO) for India held on June 23-25, 2015

## **Appendix F : Professional Services by faculty**

### **Professional Services**

#### **Dr. Alexander Fell**

- Attended Intel India Academic Forum 2015 (8th – 9th October 2015)

#### **Dr. Anand Srivastava**

- M.Tech. Examiner for IITD students both in Electrical and Bharti School.
- Technical Committee Member for IEEE 5G workshop conducted at IIT Patna
- Expert member for selecting faculty for state funded engineering colleges conducted by Chhattisgarh State Public Service Commission

#### **Dr. Angshul Majumdar**

- IEEE Signal Processing Society, Chapters' Chair (2016-2018)
- Chair, IEEE Signal Processing Society, Delhi Chapter (2015 - )
- Organizing Chair, Workshop on Ubiquitous Sensing for Effective Living, New Delhi, India, 20th and 21st November, 2015.
- Session Chair, IEEE DSP 2015 and IEEE WHISPERS 2015.
- Reviewer for ICASSP, ICIP, EUSIPCO, MICCAI
- Reviewer for Pattern Recognition, Information Fusion, IEEE ACCESS, IEEE Transactions on Cybernetics, etc.

#### **Dr. Anubha Gupta**

- Participated in four NBA (National Board of Accreditation, India) accreditation visits as ECE expert for UG and PG programs.
- Proposal acceptance on organizing a dedicated symposium on Symposium on Big Data Analysis and Challenges in Medical Imaging,” IEEE GlobalSip, 2016 Conference, to be held from Dec. 7-9, 2016, Washington DC, USA; working as lead organizer along with co-hosts: Dr. Namrata Vaswani, Iowa State Univ, USA & Selin Aviyente, Michigan State Univ, USA.
- Reviewer for leading conferences ICIP 2016, NCGVIP 2015, IEEE T4E 2015, PIMRC 2016, IEEE GlobalSIP 2015. Also reviewed journal papers for Signal Processing (Elsevier), Electronics Letters, Biomedical Signal Processing and Control (Elsevier), Computer Methods and Programs in Biomedicine (Elsevier) in the past twelve months.
- Vice Chair, IEEE SPS Delhi Chapter
- MTech External Examiner, IIT Delhi
- Hosted luncheon for signal processing professionals on Dec. 14, 2015 during the IEEE SPS Society's age ship conference GlobalSIP 2015 in Orlando, USA.

#### **Dr. A V Subramanyam**

- External thesis examiner of a PhD student from BITS, Hyderabad Campus, India.
- Reviewer of
  - IEEE Transactions on Multimedia
  - IEEE Transactions on Circuits and Systems for Video Technology
  - IEEE Transactions on Information Forensics and Security
  - ACM Transactions on Multimedia Computing, Communications and Applications
  - Elsevier Journal of Information Security and Applications

- Elsevier Information Fusion
- Springer Multimedia Tool and Applications
- SPIE Journal of Electronic Imaging
- Program Committee member of ACM Compute conference, Gandhinagar, Gujarat, 2016.

**Dr. Chetan Arora**

- Reviewer for top journals like PAMI, JMLR, TMM and TIP
- Reviewer for top conferences like CVPR, ICCV and ECCV

**Dr. Debajyoti Bera**

- Member of TPC for conference IC3 2015.
- Part of expert committee for IGNOU for moderation of exam papers

**Dr. Dong Hoon Chang**

- Established IIIT-DELHI-IRISYS R&D lab in the campus, which is the first lab in the academic institution with a Korean company in India.
- Award Committee member
- Contributing to create Applied Math department
- Editor, Journal of Platform Technology

**Dr. Mayank Vatsa**

- Vice President (Publications), IEEE Biometrics Council, July 2015 - Present
- Associate Editor, IEEE Access, 2014 - Present
- Area Editor, Journal of Information Fusion, Elsevier, February 2014 - Present
- Area Editor, IEEE Biometrics Compendium, January 2012 - March 2016
- Guest Editor, Special Issue on Applying Four D's of Machine Learning to Advance Biometrics, Access, IEEE, 2015
- Program Co-Chair, IEEE International Conference on Identity, Security & Behavior Analysis, New Delhi, 2017
- Publicity Chair, IEEE International Conference on Automatic Face and Gesture Recognition, Washington DC, USA, 2017
- Area Chair, IEEE International Conference on BTAS, Buffalo, USA, September 2016
- Publications Chair, IEEE International Conference on BTAS, Buffalo, USA, Sept 2016
- Special Session on Representation Learning, IEEE International Conference on BTAS, Niagara Falls, USA Sept 2016
- Publicity Chair, IAPR International Conference on Biometrics, Sweden, May 2016
- Area Chair, IAPR International Conference on Biometrics, Sweden, 2016
- Sponsorship Co-chair IEEE International Conference on Identity, Security and Behavior Analysis, 2016
- Session Chair, IEEE International Conference on BTAS, Washington DC, USA Sept 2015
- Special Session on 4D's of Machine Learning, IEEE International Conference on BTAS, Washington DC, USA September 2015
- Publications Chair, IEEE International Conference on BTAS, Washington DC, USA Sept 2015
- Area Chair, IAPR International Conference on Biometrics, Thailand, 2015

- Technical Program Committee Member and Reviewer:
  - Reviewer for T-PAMI, T-IP, T-IFS, PR, PRL
  - IEEE International Conference on BTAS, Buffalo, USA, September 2016
  - International Conference on Pattern Recognition, December 2016
  - European Conference on Computer Vision, October 2016
  - IEEE International Conference on Image Processing, Phoenix, USA, Sept 2016
  - IEEE International Conference on Computer Vision & Pattern Recognition, June 16
  - International Conference on Computer Vision - 2015
  - IEEE International Conference on Biometrics: Theory, Applications and Systems, Washington DC, September 2015
  - IEEE International Conference on Image Processing, Canada, September 2015
  - International Workshop on Biometrics in The Wild, co-located with Automatic Face and Gesture, Slovenia, May 2015

**Dr. Mohd. Hashmi**

- Reviewer for leading conferences APCAP, IMS, IMArc, APMC, and ISCAS. Also reviewed papers for PIER Journals, IEEE Transaction on Instrumentation and Measurements, IEEE Microwave Magazine, IEEE Microwave Wireless Component Letters (MWCL), and Elsevier Journal (IEB) in the past 12 months.
- IEEE Delhi Chapter Standing Committee Member
- MTech External Examiner, IIT Delhi
- MTech and PhD External Examiner, Gautam Buddha University, UP
- MTech External Examiner, Jamia Millia Islamia, New Delhi
- MTech External Examiner, Aligarh Muslim University, Aligarh
- Workshop Organizer at IEEE MTT-S IMArc 2015.
- Workshop Speaker at IEEE MTT-S IMArc 2015.
- Session chair at APMC 2015, IMArc 2015 and INDICON 2015.
- Organizing Committee Member: IEEE APMC 2016.
- Finance Chair: IEEE MTT-S IMArc 2016.
- PC Member: INDICON 2015, NCC 2016, iNIS 2015, SPIN 2016.

Member of various committee in SSPL-DRDO as a Subject Matter Expert.

**Dr. Ojaswa Sharma**

- Reviewer for Pacific Visualization 2016 conference.
- Reviewer for Graphics Interface 2016 conference.
- Reviewer for McGraw Hill Education, India.
- External examiner at IIT-Delhi (CSE, Prof. P K Kalra, and Prof. Subodh Kumar) for four Mtech theses defended on 30 June 2015.

**Dr. P B Sujit**

- Editor: Journal of Robotic and Intelligent Systems, Springer.

- Associate Editor: ICUAS 2015, ACODS 2015
- Reviewer:
  - Journals: IEEE Transactions on Control Systems Technology, Aerospace Electronics Systems, Cybernetics, Automation Science and Engineering
  - Conferences: IEEE CDC, ACC, IROS, ICRA

**Dr. Ponnurangam Kumaraguru**

- Founding Head, Cybersecurity Education and Research Centre, Jan 2014 - Present.
- Faculty Coordinator, Entrepreneurship activities, until July 2015. Now a member of the Committee.
- Member of many selection committees to recruit staff.
- Program Committee Member WWW 2016
- Program Committee Member ICWSM 2016
- Part of the Technical Advisory Committee for the ACM Conference on Online Social Networks (COSN), cosn.acm.org. Publicity & Web Chair: 2016.
- Technical PC Co-Chair, ACM Compute 2015 Conference, India.
- Co-Organizer for Security and Privacy Symposium. Attended by 200+ participants, including faculty / researchers, and students from all around India. 12 – 13 Feb, 2016.
- Department of Electronics and Information Technology (DeitY), Government of India. Information Security & Education Awareness (ISEA). The total worth of the project is 96.08 Crore Rupees (approx. 14.7 million USD). Direct funding for IIIT-Delhi is 1.48 Crore Rupees, Indirect funding is 10+ Crore Rupees. IIIT-Delhi is one among 40 other institutes from the country in the project. Project duration is for 5 years. Took the lead in writing the proposal, interacting with DeitY and getting the project. Feb 2016 – April 2016.

**Dr. Pravesh Biyani**

- Reviewer for various IEEE Journals and conferences TPC member, SADHNA etc.

**Dr. Pushpendra Singh**

- Steering Committee Member for MSE Track in ICSE
- Co-Chair of NetHealth 2016
- TPC member of IEEE LCN

**Dr. Rahul Purandare**

- Served as a PC member for;
  - ICSE - Research Demonstrations Track 2016
  - COMPSAC 2016
  - ISEC - Research Track 2016
  - ISEC - Industry Track 2016
  - ISEC - Mobile Track 2016
  - ACM Compute 2015
  - APSEC 2015 &
- Served as a reviewer for;
  - ACM Transactions on Software Engineering and Methodology (TOSEM)
  - Journal of Software Testing, Verification and Reliability (STVR)

- Journal of Formal Methods in System Design (FMSD)

**Dr. Rajiv Raman**

- Part of expert committee for IGNOU for moderation of exam papers.
- External Mtech reviewer for three Mtech theses at IIT Delhi.

**Dr. Richa Singh**

- Associate Editor, IEEE Access, 2016 - present
- Editorial Board Member, Journal of Information Fusion, Elsevier, 2012 - Present
- Associate Editor, EURASIP Journal of Image and Video Processing, 2013 – Present
- Webmaster, IEEE Biometrics Council, June 2015 - Present
- General Co-Chair, IEEE International Conference on Identity, Security and Behavior Analysis, New Delhi, 2017
- Guest Editor, Special Issue on Applying Four D's of Machine Learning to Advance Biometrics, Access, IEEE, 2015
- Lead Guest Editor, Special Issue on Information Fusion in Biometrics, Journal of Information Fusion, Elsevier, 2015 - 2016
- Program Co-Chair, IEEE International Conference on BTAS, Buffalo, USA, Sept 2016
- Area Chair, IAPR International Conference on Biometrics, Sweden, May 2016
- Publications Chair IEEE International Conference on Identity, Security and Behavior Analysis, 2016
- Session Chair, IEEE International Conference on BTAS, Washington DC, USA Sept 2015
- Special Session on 4D's of Machine Learning, IEEE International Conference on BTAS, Washington DC, USA September 2015
- Special Sessions Chair, IEEE International Conference on BTAS, Washington, USA Sept 15
- Area Chair, IAPR International Conference on Biometrics, Thailand, 2015
- Technical Program Committee Member:
  - International Conference on Pattern Recognition, December 2016
  - European Conference on Computer Vision, October 2016
  - IEEE International Conference on Image Processing, Phoenix, USA, Sept 2016
  - IEEE International Conference on Computer Vision & Pattern Recognition, June 16
  - International Conference on Computer Vision - 2015
  - IEEE International Conference on Biometrics: Theory, Applications and Systems, Washington DC, September 2015
  - IEEE International Conference on Image Processing, Canada, September 2015
  - International Workshop on Biometrics in The Wild, co-located with Automatic Face and Gesture, Slovenia, May 2015
  - Reviewer for several journals including IEEE T-PAMI, IEEE T-IP, IEEE T-IFS.

**Dr. Saket Anand**

- Reviewer for Elsevier's Information Fusion.
- Reviewer for Elsevier's Pattern Recognition (PR).
- Reviewer for Elsevier's Robotics and Autonomous Systems (RAS).

- Reviewer for IEEE Transactions on Knowledge and Data Engineering (TKDE).
- Reviewer for IEEE Transactions on Image Processing (TIP).
- Reviewer for IEEE Signal Processing Letters.
- Reviewer for Springer's International Journal of Machine Learning and Cybernetics (IJMLC)
- Program Committee for DIFF-CVML Workshop, in conjunction with CVPR 2016.
- Reviewer for International Conference on Pattern Recognition (ICPR) 2016.

**Dr. Sanjit Kaul**

- Reviewer for PIMRC, ISIT, IEEE Transactions on Information Theory, Mobihoc, IEEE Communications Magazine, IEEE WCNC, and etc.

**Dr. Shobha Sundar Ram**

- Associate Editor, IEEE Trans, Aerospace and Electronics Systems. This is the top venue for publication of radar work.
- Reviewer, IEEE Trans. Antennas & Propagation, IEEE Trans Microwave Theory & Techniques

**Dr. Somitra S Sanadhya**

- PC Member of: VLSI Design 2016, Indocrypt 2015, IEEE WCI 2015, SPACE 2015.
- PC co-chair of 17<sup>th</sup> International conference Indocrypt 2016 (co-chair Orr Dunkelman).
- Reviewed papers for Journal of Cryptology; Design, codes and Cryptography; and many regular Crypto conferences
- Active member of Cryptology Research Society of India (CRSI). Involved in lecturing at National workshop on Cryptology.

**Dr. Sujay Deb**

- Our (with my PhD students) tutorial proposal was accepted at VDAT 2016 and we delivered a very well attended tutorial on "Energy Efficient NoC Design for Future Many-core Processors" on 24 May 2016.
- Our Mini-symposia proposal on Cuff-less BP has been accepted at 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Florida 2016.
- TPC member of VLSI Design Conference 2016, VDAT 2016, NetHealth 2016
- Reviewer of TVLSI, TC, TCAD, JETC, SUSCOM, VLSI Design Conference, IGSC, VDAT etc.

**Dr. Sumit Darak**

- TPC member of IEEE ANTS 2015, ICACCI 2015, ICACCI 2016, VLSI SATA 2016
- Reviewer: Elsevier DSP, IEEE TVLSI, Springer CSSP
- Member of IEEE CAS, IEEE ComSoc, IEEE SPS
- Invited as a chief guest for Research Showcase, NIT Delhi

**Dr. V M V Gunturi**

- Member of program committee for the 17<sup>th</sup> International conference on web information systems engineering.
- Reviewer for Springer journal on social network analysis and mining

**Dr. Vikram Goyal**

- PC member: DASFAA 2016, VLDB PhD Workshop, ICISS 2016, IC4S 2016, Compute 2016
- External Expert for Curriculum Development of MTech in Data Science and MSc. In Mathematics with

Computation Science (Manav Rachna International University)

- Lecture at INOI workshop

### **Dr. Vinayak Naik**

- A reviewer for IEEE Transactions on Mobile Computing (TMC'16)
- A technical program committee member for the First Workshop on IoT-enabled Healthcare and Wellness Technologies and Systems (IoT of Health), co-located with MobiSys'16, Singapore June 2016
- A member of the organizing committee and chair of infrastructure track for Workshop for Smarter and Digital Delhi, New Delhi, Feb 13, 2016
- A technical program committee member of The 13th Annual IEEE Conference on Sensing, Communication, and Networking (SECON 2016), London, from June 27 - 30, 2016
- A technical program committee member of The 36th IEEE International Conference on Distributed Computing Systems (ICDCS 2016), Japan, from June 27 - 30, 2016
- Student Scholarship Co-chair for the 14th ACM International Conference on Mobile Systems, Applications, and Services (MobiSys'16), Singapore, from June 26 - 30, 2016
- A technical program committee member of First International Workshop on Urban Crowdsourcing (UCS 2016), January 4-7, 2016, Singapore
- A senior judge for Google India's Code to Learn Contest, Aug 2015
- A member of Standing Expert Peer Committee for Public Health Research Initiative Grants to evaluate projects, in public health, to be funded by Public Health Foundation of India (PHFI) and Science and Engineering Research Board (SERB) under Dept. of Science and Technology (DST), Government of India. The committee is chaired by Prof. Dileep Mavalankar, Director of Indian Institute of Public Health, Gandhinagar from Aug 2015 - July 2016
- Organized a panel discussion titled "Successfully Building PhDs" involving Aditi Gupta PhD student at IIIT Delhi, M. Balakrishnan Faculty at IIT Delhi, DR. PONNURANGAM KUMARAGURU Faculty at IIIT Delhi, Pushpendra Singh Faculty at IIIT Delhi, Richa Singh Faculty at IIIT Delhi, Siddhartha Asthana PhD student at IIIT Delhi, and Tejas Dhamecha PhD student at IIIT Delhi on Aug 5, 2015 at IIIT Delhi
- Graduate Forum Co-Chair at the Eighth International Conference on Communication Systems and NETWORKS (COMSNETS), Bangalore, India from Jan 5-9, 2016
- A program committee member of Ninth IEEE International Conference on Advanced Networks and Telecommunications Systems (ANTS'15), December 15-18, 2015, Kolkata
- A program committee member of Sixth Workshop on Real World Wireless Sensor Networks (RealWSN'15), November 1, 2015, Seoul, South Korea
- A program committee member of Third International Workshop on Software Development Lifecycle for Mobile DeMobile, at ESEC/FSE, Aug 31 - Sept 4, 2015 Bergamo, Italy
- A member of the evaluation team to judge Cloud-based startups at Center for Innovation Incubation and Entrepreneurship (CIIE) at IIM Ahmedabad, VMware Campus, Pune, June 29-30, 2015

### **Dr. Vivek Bohara**

- Reviewer for IEEE Transaction on Wireless communication, IEEE Transaction on communication, IEEE Transaction on Vehicular Technology, etc.
- Technical program committee member for conferences such as IEEE PIMRC 2015, IEEE PIMRC 2016 and ICACCI 2015.
- Organizing Chair for special session on "Technological Challenges for 5G communication" in International Conference on Advances in Computing, Communications and Informatics (ICACCI), August, 2015.

- MTech external thesis examiner at IIT-Delhi

## **Appendix G : Awards and Recognitions to our faculty**

### **Faculty Awards And Recognition**

#### **Dr. Akshay Kumar**

- Teaching excellence Recognition, IIT Delhi. September, 2015

#### **Dr. Anand Srivastava**

- Erasmus Mundus Fellowship [visiting Scholar to Aston University, UK], June/July 2015
- Erasmus Mundus Fellowship [visiting Scholar to Aston University, UK] awarded
- Visiting period: June/July 2016

#### **Dr. Angshul Majumdar**

- IEEE Senior Member, 2016

#### **Dr. Anubha Gupta**

- Elevated to Senior Member, IEEE.
- Our research paper titled "Compressive Cooperative Communication with Decode and Forward Relay" earned best poster award honorable mention in 8th International conference on communication systems and networks (Comsnet, 2016).
- Received 1200 USD travel support to present research papers at IEEE Global SIP 2015, USA.

#### **Dr. A V Subramanyam**

- Recipient of IEEE Signal Processing Society travel grant for IEEE International Conference on Image Processing, Quebec City, Canada.

#### **Dr. Chetan Arora**

- Awarded Visvesaraya Young Faculty Research Fellowship by Department of Electronics and Information Technology, 2016.

#### **Dr. Mayank Vatsa**

- NVIDIA Innovation Award - Deep Learning for Large Scale Biometrics, 2015
- Best Paper Award at IEEE Winter Conference on Applications of Computer Vision, Lake Placid, USA, 2016
- Best Poster Presentation Award at IEEE International Conference on BTAS, Washington DC, USA 2015
- Vice President Publications, IEEE Biometrics Council
- Program Co-Chair, IEEE International Conference on Identity, Security and Behavior Analysis, New Delhi, India 2017
- Publicity Chair, IEEE International Conference on Automatic Face and Gesture Recognition Washington DC, USA, 2017
- Area Chair, IEEE International Conference on BTAS, Buffalo, USA, September 2016
- Publications Chair, IEEE International Conference on BTAS, Buffalo, USA, Sept 2016
- Publicity Chair, IAPR International Conference on Biometrics, Sweden, May 2016
- Area Chair, IAPR International Conference on Biometrics, Sweden, 2016
- Sponsorship Co-chair IEEE International Conference on Identity, Security & Behavior Analysis, 2016
- Session Chair, IEEE International Conference on BTAS, Washington DC, USA Sept 2015

- Functional MRI Visiting Fellowship, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard University, USA 2016

#### **Dr. Mohd Hashmi**

- DeitY Young Faculty Research Fellowship for 5 years (2016-2021).
- Teaching Excellence Award for RFCD taught in Winter 2015.
- IEEE MTT-S Delhi Chapter Executive Committee Member.
- Editorial Board member, IEEE Microwave Magazine.
- 2nd Prize, Filter Design Contest, IEEE MTT-S IMaRC 2015, held at Hyderabad.

#### **Dr. Ojaswa Sharma**

- NVIDIA CUDA Hardware donation grant for the Virtual Campus project
- NVIDIA GPU, Education center: <https://developer.nvidia.com/academia/centers/indraprastha-institute-information-technologydelhi>

#### **Dr. Ponnurangam Kumaraguru**

- ACM Distinguished Speaker. April 2016.
- TEDX Speaker. April 2016

#### **Dr. Pushpendra Singh**

- Received Visvesvaraya Young Faculty Fellowship for 5 years

#### **Dr. Rahul Purandare**

- Received teaching & excellence & award' from the graduating (Btech and MTech) batches of 2016.
- Received several emails and personal feedbacks from our graduated students about how they have found my courses on program analysis and practice of programming useful while working in industry. I consider this appreciation also as recognition for the courses I introduced and taught at IIIT-DELHI.

#### **Dr. Richa Singh**

- NVIDIA Innovation Award - Deep Learning for Large Scale Biometrics, December 2015
- Best Paper Award at IEEE Winter Conference on Applications of Computer Vision, Lake Placid, USA, March 2016
- Best Poster Presentation Award at IEEE International Conference on BTAS, Washington DC, USA September 2015
- Associate Editor, IEEE Access, 2016 - present
- Editorial Board Member, Journal of Information Fusion, Elsevier, 2012 - Present
- Associate Editor, EURASIP Journal of Image and Video Processing, 2013 - Present
- General Co-Chair, IEEE International Conference on Identity, Security & Behavior Analysis, New Delhi 2017
- Program Co-Chair, IEEE International Conference on BTAS, Buffalo, USA, Sept 2016
- Area Chair, IAPR International Conference on Biometrics, Sweden, May 2016
- Publications Chair, IEEE International Conference on Identity, Security and Behavior Analysis, 2016
- Session Chair, IEEE International Conference on BTAS, Washington DC, USA Sept 2015
- Special Sessions Chair, IEEE International Conference on BTAS, Washington DC, Sept 2015
- Area Chair, IAPR International Conference on Biometrics, Thailand, 2015

- Functional MRI Visiting Fellowship, Athinoula A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard University, USA, 2016

**Dr. Saket Anand**

- Received best student paper award at the DIFF-CV 2015 workshop, co-located with BMVC 2015

**Dr. Sambuddho Chakravarty**

- Teaching recognition award for 2014-2015 for Security Engineering course for Winter 2015

**Dr. Sanjit Kaul**

- Received the Young Faculty Research Fellowship (sponsored by DeitY) April 2016.

**Dr. Shobha S Ram**

- Associate Editor, Trans. Aerospace and Electronics Systems
- Received 1<sup>st</sup> prize for paper: M. Gulati, S. S. Ram, A. Majumdar and A. Singh , ‘Detecting IT and lighting loads using common mode conducted EMI signals,’ 3<sup>rd</sup> International Workshop on Non-intrusive load monitoring, Vancouver, Canada, May 2016.
- Teaching Excellence Award by IIIT Delhi

**Dr. Somitra S Sanadhya**

- Serving as Adjunct Faculty, C.R. Rao Advanced Institute of Mathematics, Statistics and Computer Science, Hyderabad, University of Hyderabad Campus.
- Selected as PC co-chair of Indocrypt 2016, 17<sup>th</sup> International conference, to be held at ISI Kolkata, Dec 2016 (co-chair Orr Dunkelman)

**Dr. Sumit Darak**

- Visiting professor fellowship from CentraleSupélec, France

**Dr. Subhadip Ray Chaudhuri**

- Head Center for Computational Biology, IIIT-D (starting June 2015)
- Cambridge University Press (New Delhi) is interested in considering a book proposal based on Monte Carlo simulations in biology

**Dr. VMV Gunturi**

- Received 2nd best paper award for Vision paper track at the ACM SIGSPATIAL 2015 from Computing Research Association’s Computing Community Consortium as a part of their CCC Blue Sky initiative.
- Received Teaching Excellence award from the graduating batches of BTech and MTech 2016 by IIIT-DELHI

**Dr. Vikram Goyal**

- Ruchita Bansal, Siddharth Dawar, Vikram Goyal: An Efficient Algorithm for Mining High-Utility Item sets with Discount Notion. International Conference on Big Data Analytics 2015: 84-98 (Best Paper Award)
- Tutorial talk on the topic “Open Source Social Media Analytics for Intelligence and Security Informatics Applications” at the International Conference on Big Data Analytics 2015

**Dr. Vinayak Naik**

- The Internet of Things (IoT) Technology Research Award by Google Research on Mar 24, 2016
- Sonia Soubam receives IBM PhD Fellowship for 2016-17
- Shuchita Gupta, Yashovardhan Sharma, & myself received Gandhian Young Technological Innovation Award, 2016 under the category of MLM in the Rashtrapati Bhavan
- Teaching Excellence Award from IIIT-Delhi on the basis of student feedback in CSE232: Computer Networks course taught in Winter 15 semester
- Our team for “Use of Smart phone for Preliminary Diagnosis for Sleep Disorders” won 2<sup>nd</sup> prize at the

startup contest held at Esya, IIIT Delhi's Techfest, on Aug 21, 2015

- Innovation Internship by The Entrepreneurship Center of IIIT-Delhi for the project titled "Use of Smart phone for Preliminary Diagnosis for Sleep Disorders" for the period of May-July'15

**Dr. Vivek Bohara**

- Received best poster award (Honorable mention) at International conference on communication systems and networks" (COMSNETS), Bangalore, India, Jan, 2016 for the paper titled "Compressive Cooperative Communication with Decode and Forward Relay"
- Teaching excellence award in the year 2015 for the course Wireless System Implementation"

## Appendix H : Student's Academic Achievements

### **Students Contribution**

Paper/posters presenter

- Nidhi Agarwal authored the paper titled “3D Surface Reconstruction from Unorganized Sparse Cross Sections” which is accepted for publication in the Graphics Interface 2016 conference
- The paper titled “Fast and Robust Construction of 3D Architectural Models from 2D Plans” authored by Jalaj Pandey is accepted for publication in the WSCG 2016 conference
- Parag Aggarwal, PhD student at IIIT-Delhi, presented a paper at IEEE International Conference on Communications (ICC 2016) held on 23-27 May 2016, Kuala Lumpur, Malaysia.
- Mr. Haroon Rashid’s presented poster titled “Collect, Compare and Score: A Generic Data-driven Anomaly Detection Method for Buildings” in 7th International Conference Future Energy Systems (ACM e-Energy), held at Waterloo Canada.
- Paper titled “Greedy Deep Disaggregating Sparse Coding” by Shikha Singh, Gulati Manoj, Angshul Majumdar is accepted for publication
- Paper titled “Detecting IT and Lighting loads using Common Mode Conducted EMI Signals” by Gulati Manoj, Shobha Sundar Ram, Angshul Majumdar, Amarjeet Singh is accepted for publication
- Paper titled “Exploring The Value of Energy Disaggregation Through Actionable Feedback” by Nipun Batra, Amarjeet Singh (IIIT Delhi); Kamin Whitehouse (University of Virginia) is accepted for publication
- Paper titled “Creating a Detailed Energy Breakdown from just the Monthly Electricity Bill” by Nipun Batra, Amarjeet Singh (IIIT Delhi); Kamin Whitehouse (University of Virginia) is accepted for publication
- Paper titled “Handling Imperfections in Energy Disaggregation” - Angshul Majumdar, Megha Gupta Gaur and Manoj Gulati is accepted for publication
- Dheryta Jaisinghani, PhD Scholar, was invited for poster and oral presentations at MobiSys 2016
- Paper titled: Appliance Activity Recognition Using Radio Frequency Interference, has been accepted and selected in 99th issue of reputed IEEE Sensors Journal. This was a collaborative work of Gulati Manoj(PhD Scholar), Vibhutesh Kumar Singh(M.Tech.), Sanchit Agarwal(B.Tech.) in the guidance Dr. Vivek Bohara
- Improving Classifier Fusion via Pool Adjacent Violators Normalization”,Gaurav Goswami, Nalini Ratha, Mayank Vatsa, Richa Singh
- Fingerprint Sensor Classification via Melange of Handcrafted Features”,Akshay Agarwal, Richa Singh, Mayank Vatsa
- Face Anti-spoofing with Multifeature Videolet Aggregation”, Talha Ahmad Siddiqui, Samarth Bharadwaj, Tejas Dhamecha, Akshay Agarwal, Mayank Vatsa, Richa Singh, Nalini Ratha
- Template Aging in 3D and 2D Face Recognition”, Ishan Manjani, Hakki Doganer Sumerkan, Patrick Flynn, and Kevin Bowyer.
- “RGB-D Face Recognition via Learning-based Reconstruction”, Anurag Chowdhury, Soumyadeep Ghosh, Richa Singh, and Mayank Vatsa.
- “Fingerphoto Spoofing in Mobile Devices: A Preliminary Study”, Archit Taneja, Aakriti Tayal, Aakarsh Malhotra, Anush Sankaran, Mayank Vatsa, and Richa Singh.
- “Face Anti-spoofing using Haralick Texture Descriptors”, Akshay Agarwal, Richa Singh, and Mayank Vatsa.
- “A Multibiometrics-based CAPTCHA for Improved Online Security”, Brian Powell, Abhishek Gupta, Jatin Thapar, Gaurav Goswami , Richa Singh, Mayank Vatsa, and Afzel Noore.
- “Cross-Spectral Cross-Resolution Video Database for Face Recognition”,Maneet Singh, Shruti Nagpal,

Nikita Gupta, Sanchit Gupta, Soumyadeep Ghosh, Richa Singh, and Mayank Vatsa.

- “Detecting Medley of Iris Spoofing Attacks using DESIST”, Naman Kohli, Daksha Yadav, Mayank Vatsa, Richa Singh, and Afzel Noore.
- Prateekshit Pandey, senior undergrad, in Sweden for ICB2016 presented his paper on “Face Recognition using Scattering Wavelet under Illicit Drug Abuse Variations”, under the guidance of Dr. Mayank Vatsa and Dr. Richa Singh.
- “Mobile periocular matching with pre-post cataract surgery”: Rohit Keshari, Soumyadeep Ghosh, Akshay Agarwal, Richa Singh, Mayank Vatsa.
- “Face Identification from low resolution near-infrared images”: Soumyadeep Ghosh, Rohit Keshari, Richa Singh, Mayank Vatsa.
- “Low-rank Group Sparse Representation based classifier for pose variations”: Shivangi Yadav, Maneet Singh, Mayank Vatsa, Richa Singh, Angshul Majumdar.
- “At-a-distance person recognition via combining ocular features”: Shalini Verma, Paritosh Mittal, Mayank Vatsa, Richa Singh
- Paper titled “Class Sparsity Signature based Restricted Boltzmann Machines” accepted in Pattern Recognition journal by Anush Sankaran, Gaurav Goswami, Mayank Vatsa, Richa Singh, and Angshul Majumdar
- Paper on Detecting Facial Retouching is accepted for publication in IEEE Transactions on Information Forensics and Security - Aparna Bharati, Richa Singh, Mayank Vatsa, and Kevin Bowyer
- “Theory and Design of a Novel Wideband DC Isolated Wilkinson Power Divider” Authored by Mohammad A Maktoomi (IIIT-DELHI), Dr. Mohammad S Hashmi (IIIT-DELHI) is accepted in IEEE Microwave and Wireless Components Letters
- Paper Titled “A Theorem for Multi-Frequency DC-Feed Network Design” Authored by Mohammad A Maktoomi (IIIT-DELHI), Dr. Mohammad S Hashmi (IIIT-DELHI), Dr. Mohammadhassan Akbarpour (University of Calgary), Prof. Fadhel M Ghannouchi (University of Calgary) is accepted in prestigious IEEE Microwave and Wireless Components Letters
- Deepika Yadav’s work in the field of HCI, got accepted as a full paper in core A\* conference of ACM - SIGCHI 2016, under the guidance of Dr. Pushpendra Singh
- Naushad Ansari, PhD scholar with IIIT-Delhi, presented his paper at conference DCC 2016 (Core A\* conference) held in Snowbird, Utah, US., under guidance of Dr. Anubha Gupta
- Nipun Batra and Amarjeet Singh: Creating a Detailed Energy Breakdown from just the Monthly Electricity Bill
- Mr. M. A. Maktoomi and Dr. M. S. Hashmi (IIIT Delhi) co-authored paper “Systematic Design Technique for Dual-Band Branch-Line Coupler using T- and Pi-Networks and a Novel Wide Band-Ratio Crossover “ , along with Dr. F. M. Ghannouchi (University of Calgary, Canada). The paper is accepted for : IEEE Transactions on Components, Packaging and Manufacturing Technology (TCPMT)
- Mr. M. A. Maktoomi and Dr. M. S. Hashmi (IIIT Delhi) co-authored paper “Improving Load Range of Dual-Band Impedance Matching Networks using Novel Load-Healing Concept “
- Shreya Singh, Final Year BTech Student, and Dr. Mohammad Hashmi Assistant Professor (ECE), co-authored paper titled “Exploring Fractional Order Elements for Single and Dual Band Impedance Matching for RF Applications” which got accepted in the IEEE SPCOM 2016
- Ishant Shanu’s paper Title: “Min Norm Point Algorithm for Higher Order MRF-MAP Inference”; got accepted for publication at CVPR 2016 as a “Spotlight” presentation
- Ishant Shanu presented a poster of her research (joint work with Dr. Sanjit Kaul and Dr. Sumit Roy) in Grace Hopper Celebration of Women in Computing India (GHCI) 2015 Conference in the poster session

and won the first prize

- “Improved meet-in-the-middle attacks on 7 and 8 rounds ARIA-192 and ARIA-256” by Akshima Akshima, Dong Hoon Chang, Mohona Ghosh, Aarushi Goel and Somitra Kr Sanadhya
- “2. Differential Fault Analysis of SHA-3” by Nasour Bagheri, Navid Ghaedi Bardeh and Somitra Kr. Sanadhya

***All the papers by students are co-authored or closely guided by our talented faculty members***

### **Awards and Recognitions**

- Megha Arora receives ‘J.N. Tata Endowment Scholarship for Higher Education’ for doing her Master’s in Computer Science at Carnegie Mellon University.
- Aurora, IIIT-Delhi’s UAV team competed at the 14th edition of the coveted Association for Unmanned Vehicle Systems International Student Unmanned Aerial Systems (AUVSI SUAS) Competition held at the Naval Air Base in Maryland, USA from 15th-19th June 2016
- Alvika Gautam’s (PhD scholar at IIIT-Delhi) work titled “Vision based landing of quadcopter using guidance laws” was accepted as a poster at 9th IFAC symposium for Intelligent Autonomous Vehicles (IAV), Leipzig, Germany. She was also awarded a research support grant of 500 euros. Only 6 students received this award for the symposium.
- Submissions by Dheryta Jaisinghani, PhD Scholar at IIIT-Delhi were accepted for PhD Forum at MobiSys 2016
- Submissions by Dheryta Jaisinghani, PhD Scholar at IIIT-Delhi were accepted for ASSET Symposium at MobiSys 2016
- Submissions by Dheryta Jaisinghani, PhD Scholar at IIIT-Delhi were accepted for Women’s Workshop at MobiSys 2016
- 6 girls (Three teams) from IIIT-Delhi have qualified for Rails Girls Summer Of Code this year
- Team ‘Captain Planet’ (Dr. Alex, Amogh, Anupriya, Himani, Nipun, Puneet) of IIIT-Delhi has reached to the top three of Hackathon during Microsoft Research Internet-of-Things (IoT) Summer School hosted at the CDS department at IISc.
- Fifteen students selected Google Summer of Code!
- Megha Arora is one of the 40 students selected for the CERN OpenLab Summer Students
- eXpert (overall core-cse tech expert challenge), Second Prize: Harsh Manocha, Talha & Ahmad Siddiqui
- Select \* from Brain (DBMS event), Second Prize: Harshvardhan Kalra, Rounaq Jhunjunuwala
- Code-a-thon (Coding competition in C/C++), First Prize: Ashish Khatkar, Ambar Pal
- Code-a-thon (Coding competition in C/C++), Second Prize: Harsh Manocha, Talha Ahmad Siddiqui
- Spin-a-web (Web development competition), First Prize: Palash Bansal, Pulkit Arora
- BrainSpark (Analytical, Reasoning, and Puzzle competition), Second prize: Ashish Khatkar, Ambar Pal
- Alcoholics (Algorithm Design competition), First Prize: Ashish Khatkar, Ambar Pal
- MindMatters (IT Quiz), Third Prize: Harshvardhan Kalra, Rounaq Jhunjunuwala
- Debug++ (Debugging Contest), First Prize: Ashish Khatkar, Ambar Pal
- Debug++ (Debugging Contest), Second Prize: Harsh Manocha, Talha Ahmad Siddiqui
- Java Juggling (Coding competition in Java), Second Prize: Harshvardhan Kalra, Rounaq Jhunjunu Wala
- Manoj Gulati, PhD Student (ECE), advised by Dr. Amarjeet Singh and Dr. Shobha Sundar Ram received ‘Google’s Internet of Things (IoT) Technology Research Award

- Prateekshit Pandey, Senior Undergrad student from IIIT-DELHI Delhi was invited for The Annenberg School of Communication at University of Pennsylvania for a Prospective Student's Day on an all-expense paid trip.
- Arushi Jain (B.Tech '13) and Soumya Sharma (B.Tech '13) secured the 76th and 113th global rank respectively in Google Code Jam To I/O For Women
- Sonia Soubam, 3rd year Ph.D. scholar in Mobile and Ubiquitous Group, working in the area of Mobile and Wearable Sensing under the supervision of Dr. Vinayak Naik and Dr. Dipanjan Chakraborty, received IBM Ph.D. Fellowship Award.
- Yashovardhan Sharma (3rd year BTech student of
- Ishant Shanu's , paper: "Min Norm Point Algorithm for Higher Order MRF-MAP Inference"; got accepted for publication at CVPR 2016 as a "Spotlight" presentation
- 3 teams of IIIT-Delhi have qualified for the finals of Build The Shield organised by Microsoft.
- Ankur Singh, featured in the Economic Times for his team's victory in Tata Pioneer's Makerthon!
- Mohit Wadhwa secured 2nd rank in India, and 14th rank globally out of 5000+ participants in CodeChef's February Long challenge
- Tejas Indulal Dhamecha, PhD student @IIIT Delhi, received a Special Mention in 'XRCI Doctoral Dissertation Award' for his dissertation: 'Pushing Boundaries of Face Recognitions'
- IIIT-Delhi student Vrinda Malhotra got interviewed by Education Times for her work
- Dinesh Rano, a Ph.D. student working under the guidance of Dr.M.S.Hashmi IIIT-Delhi has been awarded with cash prize and certificate for the 'best report' at International Microwave and RF Conference.
- M. A. Maktoomi (PhD Student) and Dinesh Rano (PhD Student) working under supervision of Dr. M. S. Hashmi have bagged 2nd prize in the filter design competition at the prestigious IEEE MTT-S IMaRC 2015 held at Hyderabad in December, 2015.
- One student won the first prize in Grace Hopper Celebration of Women in Computing India (GHCI) 2015 Conference
- Best Paper Award: An Efficient Algorithm for Mining High-Utility Itemsets with Discount Notion. Authors: Ruchita Bansal, Siddharth Dawar, Vikram Goyal
- Best poster award (honorable mention) at IEEE ComsNets 2016 for the paper titled "Compressive Cooperative Communication with Decode and Forward Relay". Authors: Neha Jain, Vivek Ashok Bohara and Anubha Gupta
- Dinesh Rano, a Ph.D. student working under the guidance of Dr.M.S.Hashmi IIIT-Delhi has been awarded with cash prize and certificate for the 'best report' at International Microwave and RF Conference.

### **Professional services**

- PhD student Nipun Batra was a part of the steering committee and Technical Program Committee.
- Manoj Gulati and Milan Jain were a part of the Technical Program Committee.
- PhD students Hemanta Kumar Mondal and Sri Harsha Gade presented a very well attended tutorial at 20th International Symposium on VLSI Design and Test (VDATE 2016). The title of the tutorial was 'Energy Efficient Network On-chip Design for Future Many-core Processors'. Selection of the tutorial was through a competitive review process.
- Gaurav Goswami visited IBM- TJ Watson Research Center (NY, USA) for collaborative researcher (Jan - May 2016)
- Arushi Jain, a graduating student of IAB Lab, has been selected by Microsoft Research as a research fellow to work with the Applied Machine Learning team!
- Romil Bhardwaj (class of 2015), to join MSR from the lab!

- Dilraj Kaur, delivered Talk Title: “Isolation and characterisation of Pitef encoding the translational elongation factor EF-1 of the root endophyte Piriformospora indica”
- Prasant Chidella, delivered Talk Title “ Coarse grained MD simulations on GPU”
- Chakit Arora, delivered Talk Title “Complexity, dynamics and chaos”
- Shiju S, delivered Talk Title “Circadian rhythms and molecular noise”.
- Anupam Mondal, delivered Talk Title, “Searching target sites on DNA by proteins: Role of DNA dynamics under confinement”

#### **IIIT-Delhi students going for higher education**

- Archit Srivastava is going to University of Southern California (USC) to study MS in Computer Science.
- Mehak Soni finished her Masters in CS at USC;
- Kanika Narang now a Ph.D. student at University of Illinois at Urbana-Champaign,
- Prachi Jain now a Ph.D. student at IIT Delhi, and
- Megha Arora, going to Carnegie Mellon University for Masters,
- Akshima gets admit in PhD program in Theoretical Comp Sc at Penn State university
- Aarushi gets admit in PhD program at Johns Hopkins in Theoretical Crypto
- And Mohona Ghosh finishes her doctorate and will soon be joining as a post-doc at NTU Singapore
- Jayasi Mehar, a student from the B.Tech class of 2015, got admission in MS (in Computer Science) program at University of Illinois at Urbana-Champaign!
- Shantanu Goel, decided to pursue Master’s degree from Singapore Management University after his BTech in CSE from IIIT-Delhi

## Appendix I : Student Clubs

<b>“Summary Report of Student Clubs Activities for 2015-16”</b>		
<b>Club</b>	<b>Focus Area</b>	<b>Activities</b>
<b>Trivialis</b>	Quizzing	Quizzing like Sports, Pop culture, Music Lit Ent, Movie/TV, BigBang & Friends , and General during ESYA, Freshers party, Orientation & Cadence. Organized Bi-annual and On-line Quizzes
<b>FooBar</b>	Programming	Programming Workshops as INOI workshop for school students, Introduction of Foobar Elite other events: ProSort (38), CodeClass (30) , ESYA’s ProCon 2015, Induction Contest, Participated in ICPC: Programming Contest(3 Regional Sites(Amritapuri, Kolkata, Chennai), 16, 6, 9 Teams respectively), Codechef’s February Long challenge. FooBar Contest Portal. Participated in Snapdeal Hackathon, IIIT Codeflux, Shivaji Techfest, DUCS Sankalan, BVP Techfest. Members have participated and won 624th global rank in the highly competitive and prestigious Facebook HackerCup Round 2. Others like IndiaHacks and ICPC Preparatory Series by IPC, 76th global rank in Google Code Jam To I/O for Women, winning a ticket to Google I/O 2016, 2nd rank in India, and the 14th rank globally out of 5000+ participants in Codechef’s February Long challenge.
<b>BYLD</b>	Software Development	Organized Hackathon (4), Scripting Challenge (4), HackEve/HackNight (16) like Docker, Anonymity on web using Tor, Automation scripting using Ansible), Tech Talk (4), Developer Accounts, Byldathon (1), Tech Talks, GSoC Talk QnA
<b>Prodigious Painters</b>	Painting	Art-a-Thon, Photo Recreation, Madhubani Paintings and Poster making.
<b>AudioBytes</b>	Music	Convocation Day, Eid Celebrations, Independence Day, Republic Day, Retrace3rd Alumni Meet, Karaoke Night, Talent Night, Singing (10), Piano class (6), Vocal and Guitar sessions (6). Initiatives as Acoustic Guitar, Indian Classical Vocal Classes, Drums Classes, Music Instruments Repair, Member achievements: 1st position in Dyal Singh category College ( Hindustani Classical vocal solo), in Sri Venkateswara college ( Semi-classical vocal solo), in Shaheed Bhagat Singh college( Semi-classical solo). 2nd position in Hansraj college(Semi-classical solo) 3rd position in Kirori Mal college(Semi-classical solo), in Miranda House( Semi-classical solo)
<b>Machaan</b>	Dramatics	Stage Play for teacher’s day celebration, Street Play prepared- Pehchaan and it’s video was shot for prelims for inter college fests, Mime act prepared for Republic Day. Mono act competition in Cadence, Skit competition planned later this month.
<b>Ink</b>	Design Club	Celebrate and Welcome New Members at Ink. Out, Cadence, ESYA, Brochure, Institute handbooks, Alumni Year book & Farewell mementos. Ink Tank (7), Minimal Design, Ink Spot

Club	Focus Area	Activities
<b>Game Craft</b>	Game Development	Game Dev Workshop , Level Design Competition , Complete Game Dev , Texturing Competition , FIFA Frenzy , Research Showcase . Other work was Game Development for mobile, Using Buildbox to create levels, Using Buildbox to make publishing-ready games, Publishing game to the app store, Monetizing games , Association with Virtual Campus, Making Photorealistic Environments , Texturing in Substance Painter , Basics of Unreal Engine (4)., Lighting in Unreal Engine (4)., Playing and Setting up Virtual Reality in Unreal Engine (4). Both 2D and 3D game design
<b>MadToes</b>	Dance	Independence Day Celebration : 8, Auditions : 40, Dance classes (2 sessions) : ~50 Each, Lesson by Choreographer : 15, Rendezvous Prelims: 12, Cadence : 12, NSIT Moksha Prelims : 12
<b>Tasveer</b>	Photography	Made IIIT-DELHI logo with students, August '16: Lodhi Garden , August'16: Rashtrapati Bhawan, September'16 : Old delhi Tasveer members are a part of the Media Panel, Tasveer covers all the institute events (including cultural and sports events).
<b>The 65th SQUARE</b>	Chess	Intra and inter college chess, Sports Fest, 2015 in IIT-BHU, Triquetra, 2016 in DTU, Delhi
<b>The Philosophy Society</b>	Philosophy	Panel Discussion on Excursion/picnic/museum visit, Weekly meetings among Lunchbox Philosophers.
<b>Voix De Literati</b>	Public Speaking, Reading & Writing	Fresher's Debate, Poetry Workshop by Kaafiya, Group Discussion on Police Reforms, Independence Day Panel Discussion, Bookmeets, Online Haiku Writing Competition, Online Limerick Writing Competition, Movie Marathon- Hunger Games, Jaipur Literature Festival Trip, Poetry Recitation (In collaboration with Audiobytes), Grammar Nazi Bookmeets, Online short story writing 16 Words To Go (Pre-Cadence event), Just A Minute (During Cadence'16), Terribly Tiny Tales Competition (In collaboration with TEDxIIITD) Republic Day Speech, Midnight Meetings, Bring Your Book, Lit-Talk , Lit-Nights like open mic nights where people can read their own other people's work out loud. Honor of being an editor at Icy Tales, a blog website, article was published in The Education Times.
<b>Adventure Club</b>	Adventure	Trip to Goa
<b>Eco Club</b>	Cleaning & Awareness	Cleaning drives at nearby areas of IIIT-DELHI (8), E waste Drive, Goonj Drive (3), Collection Drive, SOHF Swachh Mela, Swatch Bharat Abhiyan
<b>Cultural team</b>	Culture	Celebrated Independence Day, Republic Day, Lohri, Dandiya, Eid, Masquerade Party, MUN, Diwali, Rangoli, Cadence, Halloween Party, The Night and TEDxIIITD.
<b>Sports Committee</b>	Sports	Conducted full-fledged Sports meet Triquetra (with DTU & NSIT), Participated in IIIT sports meet "Twaran" at Gwalior, Spardha at IIT BHU, Participated at NSIT & IIM-Indore sports meet, Organized Intramural tournament at IIIT-DELHI.







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