Indraprastha Institute of Information Technology, Delhi

information brochure
The mission of IIIT Delhi is to be a global centre of excellence in Information Technology education, training and research. Its twin objectives 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 researchers, innovators, and new product creators.

IIIT Delhi is organized as a conglomerate of R&D Centers and groups, some of which would be in partnership with other organizations across the world. These centers/groups are the hub of activity, with active contribution from faculty, researchers and students, and will also be engaged in teaching and thesis guidance.

Starting off from a three room institution with just one faculty member, IIIT Delhi has grown to 220 undergraduate, 22 MTech and 14 PhD students with 17 faculty members in just 2 years. We are now moving steadily towards our medium term plan to become an Institute of about 2000 students, 100 faculty members, 25 research groups, and new teaching programs and research initiatives.
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.

The Institute is academically and administratively autonomous. The Chancellor of the Institute is Honourable Lt. Governor of Delhi, who also chairs the General Council of the Institute. Overall policy making and governance rests with the Board of Governors, which consists of four eminent persons, two Professors, two nominees of the government, the Director, and the Chairman. The Director is the operational head of the Institute.

The Senate is the decision making body for academic policies and governance. It is comprised of faculty members, student representatives, external faculty (from IITs and other IIITs), and members from corporations. The Senate sets the academic framework and takes decisions for its implementation. After getting board approval, Senate can start new degree programs. All instruction, examination and evaluation are decided by the faculty.
Only research-led Institutes can have excellence. A good PhD faculty will not join an institute that focuses on teaching alone. This belief has resulted into an organization that revolves around R&D centres. Some of our research groups are already amongst the largest in India.

- Software Engineering
- Information Management and Data Analytics
- Theoretical Computer Science
- Image Analysis and Biometrics
- Emerging Architecture and Systems Design
- Information Security
- Mobile and Ubiquitous Computing

Strong PhD and Masters programs form the backbone to the centers providing the required researchers. The institute has been successful in embedding research based project work in the undergraduate program. Papers, technologies, patents are important outputs from these centres. Based on the soundness of approach, the institute has received research projects from institutions like DIT, DST, Nokia, SAP, Microsoft, IKSL, TCS etc.
FACULTY

Pankaj Jalote
Director and Professor
jalote@iiitd.ac.in
Ph.D.(1985), University of Illinois at Urbana-Champaign

Ashish Sureka
Assistant Professor
ashish@iiitd.ac.in
Ph.D.(2005), North Carolina State University

PhD STUDENTS

Amit Kumar, Damodaram Kamma

SPONSORED PROJECTS

• Reengineering Existing Applications for Multicore Services, Department of Science and Technology (DST), India.

RECENT PUBLICATIONS

• A. Sureka, A. Goyal and A. Rastogi, Using Social Network Analysis for Mining Collaboration Data in Defect Tracking Systems for Risk and Vulnerability Analysis, India Software Engineering Conference (ISEC), Thiruvananthapuram, India, Feb 23-27, (2011)
• Sureka and A. Goyal, Insights on Transferability of Dialog-Act Cue-Phrases Across Domains and Modalities, International Conference on Natural Language Processing (ICON), 2010

HONORS + AWARDS + RECOGNITION

• Pankaj Jalote is Elected Fellow, Indian National Association of Engineering (INAE), 2011.
• Pankaj Jalote delivered a Keynote address (Crowd Researching: Engaging Practitioners in Software Reliability Research) in 29th IEEE International Symposium on Reliable Distributed Systems (SRDS), New Delhi, Nov 2010.
• Pankaj Jalote was Program Chair for ISSRE 2009
• Ashish Sureka delivered invited talks related to the groups work on Mining Software Repositories at a workshop organized by Delhi University in Dec 2010 and a conference organized by JIIT Noida, 2010
• Amit Kumar’s poster selected at TechVista 2011 (Microsoft Research India’s annual research symposium)
**FOCUS AREAS**
Databases, Data Mining, Mobile-P2P data management using economic models, Information Retrieval, Business Intelligence, Data Privacy and Access Control.

**FACULTY**

Anirban Mondal  
Assistant Professor  
anirban@iiitd.ac.in
PhD (2003), National University of Singapore

Ashish Sureka  
Assistant Professor  
avish@iiitd.ac.in
PhD (2005), North Carolina State University

Vikram Goyal  
Assistant Professor  
vikram@iiitd.ac.in
PhD (2009), Indian Institute of Technology, Delhi

Srikanta Bedathur (To join in April 2011)

**PHD STUDENTS**

Nilesh Padhariya, Denzil Correa

**SPONSORED PROJECTS**

- Data Mining for Cyber-Crime, DIT-funded Project, PI: Ponnurangam Kumaraguru, Co-PI: Ashish Sureka

**RECENT PUBLICATIONS**

- Dongxiang Zhang, Yeow Meng Chee, Anirban Mondal, Anthony Tung and Masaru Kitsuregawa Keyword search in spatial databases, Proceedings of the International Conference on Data Engineering -- ICDE 2009
- Ashish Sureka and Atul Goyal, Insights on Transferability of Dialog- Act Cue- Phrases across Domains and Modalities, International Conference on Natural Language Processing - ICON 2010

**HONORS + AWARDS + RECOGNITION**

- Anirban Mondal (joint tutorial with Sanjay Kumar Madria) Dynamic Data Management in Mobile P2P Networks IEEE Symposium on Reliable Distributed Systems --SRDS 2010 (tutorial)
- Members of the IMDA group have served as PC members in the following conferences: (selected list) ICDE 2011, PAKDD 2011, MDM 2011 DEXA 2010, DEXA 2009, DaWaK 2010, DaWaK 2009, COMAD 2009
- Ashish Sureka recently granted a US Patent (US 7801836) on Sept. 21, 2010 (Assignee: Infosys)
- Denzil Correa selected for National Internet Exchange of India (NIXI) Fellowship Programme, facilitated by the Digital Empowerment Foundation
FOCUS AREAS
Logic, Process algebras, modelling and verification of reactive systems, Learning algorithms for automata, Complexity theory, Quantum computing, Cryptography

FACULTY

Astrid Kiehn
Associate Professor
astrid@iiitd.ac.in
PhD (1989), Technische Universitat Munchen

Debajyoti Bera
Assistant Professor
dbera@iiitd.ac.in
PhD (2009), Boston University

Somitra Kumar Sanadhya
Assistant Professor
somitra@iiitd.ac.in
Ph.D. (2009), Indian Statistical Institute, Kolkata

RECENT PUBLICATIONS
**FOCUS AREAS**
Image Processing, Pattern Recognition, Machine Learning and Biometrics

**FACULTY**

**Mayank Vatsa**  
Assistant Professor  
mayank@iiitd.ac.in  
PhD (2008), West Virginia University

**Richa Singh**  
Assistant Professor  
rsingh@iiitd.ac.in  
PhD (2008), West Virginia University

**PhD STUDENTS**

Himanshu S. Bhatt, Tejas I. Dhamecha, Anush Sankaran, Samarth Bharadwaj

**RESEARCH PROJECTS**
- Design algorithm for recognizing face images with variations due to pose, illumination and expression, Supported by Department of Information Technology, 2009 - 2012
- Statistical Evaluation of Simultaneous Latent Fingerprint Impression, Supported by Department of Science and Technology (FAST Track), 2010 - 2013
- Quality Assessment of Fingerprint Images from Indian Population, Supported by Unique Identification Authority of India, 2009 – 2010

**RECENT PUBLICATIONS**

**HONORS + AWARDS + RECOGNITION**
FOCUS AREAS

FACULTY
Amarjeet Singh
Assistant Professor
amarjeet@iiitd.ac.in
PhD (2009), University of California Los Angeles

Saket Srivastava
Assistant Professor
saket@iiitd.ac.in
PhD (2008), University of South Florida

Subhasis Banerjee
Assistant Professor
subhasis@iiitd.ac.in
PhD (2006), Indian Institute of Science, Bangalore

RECENT PUBLICATIONS

HONORS + AWARDS + RECOGNITION
• Saket Srivastava is a member of Technical Program Committee for DATE 2011 and also an expert external reviewer for DAC 2011
FOCUS AREAS
Security and Usability, Dependable Software Systems, Botnets, Auditing Enterprise Security, Cryptology, Digital and Cyber Forensics, Privacy

FACULTY

Gaurav Gupta
Assistant Professor
gauravg@iiitd.ac.in
Ph.D. (2009), Jadavpur University, Kolkata

Ponnurangam Kumaraguru
Assistant Professor
pk@iiitd.ac.in
Ph.D. (2009), Carnegie Mellon University

Shishir Nagaraja
Assistant Professor
nagaraja@iiitd.ac.in
Ph.D. (2008), University of Cambridge

Somitra Kumar Sanadhya
Assistant Professor
somitra@iiitd.ac.in
Ph.D. (2009), Indian Statistical Institute, Kolkata

FACULTY

Vikram Goyal
Assistant Professor
vikram@iiitd.ac.in
Ph.D. (2009), Indian Institute of Technology, Delhi

PhD STUDENTS

Paridhi Jain, Aditi Gupta, Denzil Correa

SPONSORED PROJECTS

- March 2010: Research grants from Government of India to work on technologies to counter cyber crime.
- March 2010: Research grants from International Development Research Centre, IRDC to study privacy perceptions in India.
- P3CA: Privacy Preserving Traffic Anomaly Detection for ISP Networks is an ongoing project where we are trying to balance privacy requirements of ISPs with their desire to cooperatively detect malicious traffic.

RECENT PUBLICATIONS


• Botgrep: Finding P2P Bots with Structured Graph Analysis accepted at the USENIX Security 2010 Symposium.

• The impact of unlinkability on adversarial community detection: effects and countermeasures accepted at the Privacy Enhancing Technologies Symposium(PETS) 2010.

HONORS + AWARDS + RECOGNITION
Gaurav Gupta
• Young Scientist Award winner for 2010 from Indian Science Congress
• Program Committee of DFRWS 2010

Shishir Nagaraja
• IBM X10 2010 innovation award
• Program committee member for 10th Privacy Enhancing Technologies Symposium 2010

Ponnurangam Kumaraguru
• Track Chair, CEAS 2011
• Program Co-chair for CEAS 2010
• Program committee of SOUPS 2010
FOCUS AREA
Using mobile phones as low cost computing and communication platform for critical applications such as healthcare, education and energy monitoring, among others.

FACULTY

Amarjeet Singh
Assistant Professor
amarjeet@iiitd.ac.in

PhD (2009), University of California Los Angeles

Pushpendra Singh
Assistant Professor
psingh@iiitd.ac.in

PhD (2004), INRIA (Université de Rennes), France

Vinayak Naik
Assistant Professor
naik@iiitd.ac.in

PhD (2006), Ohio State University,

SPONSORED PROJECTS

- Technology review of voice based value add services for farmers by Iffco Kisan Sanchaar Limited
- Research Proposal to Use Mobile Phones for Day-to-Day Routine Activities by Masses in India, Nokia Research, Palo Alto, USA
- Health Monitoring and Reporting using Cellphones, Nokia Research, Finland
- Development and Evaluation of Mobile Learning Techniques for Indian Masses, Department of Science and Technology, India

RECENT PUBLICATIONS


PHD STUDENTS

Pandarasamy Arjuna, Kuldeep Yadav, Siddharth Asthana

HONORS + AWARDS + RECOGNITION
• Vinayak Naik was a program committee member of Sensing Technology at the National Exhibition Centre in Birmingham, UK on 27 - 28 Sept, 2010
• Vinayak Naik was a program committee member of Networks track at The Seventeenth National Conference on Communications (NCC 2011) held in IISc, Bangalore on 28 - 30 Jan, 2011
• Vinayak Naik was Program Committee member of PhD Forum and Nethealth workshop, COMSNET'2011, Bangalore
• Pushpendra Singh was publicity chair for Middleware 2010 (ACM/IFIP/USENIX 11th International Middleware Conference)
• Amarjeet Singh co-organized Workshop on Sensor Enabled Situational Awareness (SESA) in ICDCN, January 2, 2011, Bangalore, India
• Amarjeet Singh was one of the panelist in the panel on Bridging the Connectivity Divide, COMSNETS, 2011
• Amarjeet Singh co-organized International Symposium for Experimental Robotics (ISER), 2010, Delhi, India
• PhD student Kuldeep was selected to present in the PhD Forum at COMSNETS’2011.
IIIT Delhi currently offers three programs: BTech in Information Technology, MTech in Computer Science, and PhD in Computer Science.

### B. Tech. (IT) Program

The objective of this program is to prepare students to undertake careers involving innovation and problem solving using IT, or to undertake advanced studies for research careers in IT or the domain areas.

As the program is IT focused, it inverts the pyramid and starts with computing oriented courses first, and the general and sciences courses later. This enables students to see newer applications and possibilities of relating IT with these subjects.

The core part of the program focuses on computing fundamentals as well as communication skills. After the core program, there is flexibility on the courses the students can do. The program allows limited specialization through the concept of streams. Humanities and social sciences is an integral part of the curriculum. The program allows motivated students to graduate with a BTech (Honors) by doing extra units.

The students interested in research can use “independent study” and “independent projects” courses to improve their research skills.
A Masters degree in IIIT Delhi is primarily industry-focused, though it can be used as a stepping stone for research as well. The decision whether the degree is to be pursued for skill and knowledge up-gradation or also for building research skills rests with the student.

To address the needs of the industry, which today requires more specialized manpower as each field is getting more complex, the Institute permits a student to do an “M.Tech. in Computer Science” or “M.Tech. in Computer Science with specialization in an area”. Currently, the Institute is offering specialization in Information Security. We plan to start new specializations in coming years.

The M.Tech. program is flexible providing the student options to do it with a thesis, or without a thesis with a scholarly paper. Students pursuing the without thesis option have to do additional courses, and instead of a thesis will have to do a scholarly paper.
The overall PhD program requires students to do limited coursework followed by a seminar and research. Students can enter the PhD program after a B. Tech. or M.Tech. degree and are expected to complete their coursework accordingly. For candidates with work experience, relevant experience may be counted as advanced knowledge in the area of expertise(s) and experience(s). Courses may be done in other recognized institutes or independently after approval for counting for the fulfillment of the credit requirement.

A PhD candidate must give an open seminar in a chosen topic followed by a viva by a committee. Passing this viva successfully will formally make the candidate a PhD scholar. This is equivalent to the Qualifiers or Comprehensive in many other places. After this Open Seminar, the focus is on the PhD thesis work. A scholar is expected to make a yearly presentation about the work done in the last year.

IIIT Delhi has also started a collaborative PhD program with several globally renowned labs and universities. Key features of this program are:

- The main supervisor of the PhD scholar will be from IIIT Delhi; there may be a co-supervisor from the partner group.
- After doing the course work and starting the research, the scholar may spend 3 months to 1 year with the co-supervisor at the partner group/institution.
- An attractive stipend is paid while he is in the campus. When the scholar is at the partner group/organization, the partner will pay the stipend as per their norms.
- Institute will provide support to present papers in national and International conferences.
IIIT Delhi has 17 full-time faculty members – all of them have a Ph.D. Most of them have done their PhD from USA and Europe. In addition, adjunct faculty from industry and other institutions supplant our regular faculty in academics and research.

We also have a panel of educators for humanities and social science courses that are part of the curriculum.

In the last two years, IIIT Delhi faculty has published 24 papers in national and international journals. They also participated in 3 conferences. Faculty was also received 5 prestigious awards for their contributions.

IIIT Delhi faculty has established a close connect with the Industry. As a result, we currently have externally funded R&D projects worth approx. Rs. 55 million.
Students are inevitably the converging point of all dynamism at IIIT Delhi. A majority of students at both undergraduate and postgraduate level are selected by a non-conventional aptitude test along with their previous merits. One of the main goals of the institute is to provide flexibility to students for motivated learning through elective courses.

Being a research-led institute, students participate in research projects through internships. Even UG students are encouraged to co-author research papers. They are also given opportunities to work for real-life systems (like ERP and PRS) for applied learning.

The inter-disciplinary approach to education helps students to grow as better human beings through compulsory community work and humanities courses. Each student is allotted a faculty mentor for guidance during the program. An open and friendly culture has evolved in the institute to prosper by assisting and discussion. A student council is elected by students to articulate their views and ideas in functioning and governance of the institute.

An ACM Student Chapter gives opportunities to students to get exposure to knowledge and trends in computing. Several student clubs like cultural, sports and technical clubs enable them to enhance talents in areas besides academics.
CURRENT TRANSIT CAMPUS

The transit campus of IIIT Delhi is on the 3rd and 2nd floors of the Library Building of Netaji Subhas Institute of Technology (NSIT) in Dwarka. The interiors have been specifically planned for IIIT purposes and contain administrative offices, faculty offices, class rooms, computer labs, and some recreation facilities like TT table and a pool table. NSIT allows limited use of its sports fields for IIIT students. Some hostel rooms in NSIT are also available for IIIT Delhi students.

PERMANENT CAMPUS AT OKHLA

Construction of the Permanent Campus has already started in Okhla near Nehru Place in South Delhi, where the Institute has been allotted 25 Acres of land in the GB Pant Polytechnic compound. The Phase I of the Campus will come up by last quarter of 2011, and will have a total area of appx 30,000 sqm containing an R&D block, an academic block, boys and girls hostels, a student activity center with food court and other facilities, and a faculty residence block.

The new campus is planned to be -

- Clean, green, and energy efficient
- Smart and connected
- Fun and open place for learning
- A place for interaction and collaboration
- Entrepreneurial, active and lively
Prof. John Hopcroft, Cornell University (Turing Award Winner): “It is great that India has created another first rate educational institution. I hope others will follow your example of striving for excellence in education and research.”

Prof. Satish K. Tripathi, Provost, SUNY Buffalo: “…I am confident, given the leadership and the high quality faculty the Institute has already recruited, that IIIT Delhi will be one of the top Institutes …within a few years.”

S. N. Maheshwari, Ex-Dean, IIT Delhi: “…IIIT Delhi stands out for the planning, attention to detail, … provided the Institute does not lose sight of the objectives and goals.”

Prof. Rajeev Sangal, Director, IIIT Hyderabad: “I see IIIT Delhi coming up in right earnest with innovative programs … also addressing all round development of the student ....”

Sanjeev K Aggarwal, Dean, IIT Kanpur: “…IIIT Delhi has done an excellent job of recruiting high quality faculty in a very short time, ....”

M. Balakrishnan, Deputy Director, IIT Delhi: “…IIIT Delhi is championing the model of self-sustainability, which has huge potential for scalability. ..”

Krithi Ramamritham, ex-Dean, IIT Bombay: “In a short time IIIT Delhi has brought together a strong internationally-trained multidisciplinary faculty with varied experience ...”