Indian Institute of Technology Patna
भारतीय प्रौद्योगिकी संस्थान पटना

Department of Computer Science and Engineering
B.Tech Placement Brochure
2019-20

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Dr. Jimson Mathew

HOD, Department of CSE

The department of Computer Science and Engineering was among the first engineering branches to be setup at IIT Patna in 2008. The department runs B.Tech, M.Tech and PhD programmes. A joint M.Tech programme (Mathematics and Computing) is also offered with the department of Mathematics. The academic curriculum of the department is constantly revised to keep in pace with the current industry and research trends, the last revision being in 2015. In order to allow students flexibility in choosing their subjects of interest, over the years the number of elective courses has been increased. With a view to encourage creative ideas, the department introduced a lab course on Innovative Design in the undergraduate programme.

The department lays great emphasis on research and development. The department has close interaction with the industry and research institutes both in India and abroad. Research labs have been setup in the department in collaboration with the industry and government agencies - Elsevier Centre for Excellence of Natural Language Processing; ezDI Research Lab on Health Informatics, Network Security Lab; Advanced Computing Lab and Embedded Systems Integration Lab. A number of high value sponsored research projects are running in the department.

The faculty members of the department have received recognition and a number of awards for their work - ACL President, 2016 (the highest body of NLP); Eminent Engineer Award by Institute of Engineers; NASI young scientist platinum jubilee award, 2016; BIRD Award 2016; IEI Young Engineers Award 2016 (Computer Engineering Discipline); Junior Humboldt Research Fellowship; JSPS Fellowship from Japan Govt. among others.

This brochure has been designed to cater to a wide range of people who often seek specific information about the department and courses that we offer. To this end, we have compiled a set of useful information for individuals/organizations interested in our programs, our research endeavors, as well as information regarding the faculty. I hope you will find the information helpful. We always appreciate your feedback as to how we might make the materials more informative and enlightening. For any additional information, please do not hesitate to contact us.

The department of Computer Science and Engineering came into existence in 2008 with minuscule faculty strength and a minute undergraduate student body. This inadequacy was no deterrent to its bold decision to start the doctoral program right away.

The department offers Bachelor's degrees in Computer Science and Engineering (CSE), Master's degrees and PhD in various specialized areas of Computer Science.

The department stands strong today, boasting of a multitude of accomplished faculty members, and a vibrant student body. The department is all set to extend collaborations with more universities across the world, harboring new ideas and providing solutions to industrial and government projects.

The department boasts of generously equipped teaching and research laboratories. Doctoral candidates are liberally supported either by scholarships or by sponsored fellowships. Sponsored research and developmental activities add muscle to the buzzing academics.

CORE

- Artificial Intelligence
- Computer and Network Security
- Computer Networks
- Databases
- Distributed Systems
- Formal language and Automata
- Introduction to Network Science
- Introduction to VLSI CAD
- Machine Learning
- Natural Language Processing
- Operating Systems
- Pattern Recognition
- Software Testing
- Wireless Networks

MATHEMATICS AND COMPUTING

- Advanced Graph Theory
- Algorithms
- Complex Analysis and Fourier Series
- Computational Topology
- Discrete Mathematics
- OOP and Data Structures
- Probability Theory and Random Processes

DEVICES

- Computer Organization and Architecture
- Computer Peripherals and Interfacing
- Digital Design

DR. SOMANATH TRIPATHY

The Computer Science and Engineering Department, IIT Patna has established in 2008. The objective of the department is to offer high quality education and cutting-edge research opportunities to its students, enabling them to solve more practical problems relevant for society and share skills and knowledge with the community. Keeping this in mind, the curriculum has been designed to prepare our students to be entrepreneurs and academic leaders. To facilitate this innovation lab is introduced at the mid stage of the B.Tech curriculum and offer a wide range of electives including Blockchain, Cryptography, Machine Learning, Data Science, Deep Learning, Distributed Systems, Security, Natural language processing, Advance algorithms, Embedded system, Cloud computing.

Besides this, our students actively participate in the Computer Science Club of IIT Patna namely NJACK conduct different coding contest making ready the new entrants.

DR. RAJIV MISRA

The Students of this Institute, as witnessed over the past years have contributed meaningfully to any endeavor they have joined. Students have ventured into fields like AI (Artificial Intelligence), NLP (Natural Language Processing), Cloud Computing, IOT (Internet of Things) and Edge Computing. The students have a strong mathematical background and analytical problem-solving abilities, all of which add to their repertoire of ways to contribute and solve problems.

NJACK

NJACK (Not Just Another Computer Science (K) Club!) is an active computer science club of IIT PATNA. It acts as a forum for discussion and exchange of ideas and experiences on various topics related to programming and problem solving among its members. It promotes and ensures participation of students in various nationally and internationally renowned coding competitions.

CODECHEF CHAPTER

CodeChef Campus Chapter IIT PATNA aims at bringing brilliance into the stream of competitive programming within the college using CodeChef resources and platform. It organizes regular meetups, contests, workshops under NJACK competitive programming department.

CODECHEF
IIT PATNA

GIAN

Global Initiative for Academic Networks, a program approved by the Govt. of India aimed at tapping the talent pool of scientists and entrepreneurs, encourages their engagement with the institutes of Higher Education of India. Time to time GIAN courses and workshops are conducted with a great involvement of students.

GIAN
GLOBAL INITIATIVE OF ACADEMIC NETWORK

DEVELOPER STUDENT CLUBS

DSC IIT Patna powered by Google Developers believe in building a community that follows the principal of 7 Ps that stands for People, Purpose, Place, Participation, Policy, Promotion and Performance. We are building a great community that can create an impact through technology by innovation and participation of all of its members, developing various projects over time.

Developer Student Clubs

CEP

The Continuing Education Programme (CEP) activity has been set up to meet the manpower training and knowledge upgradation needs of the industry, academia, and research organizations. The main aim of CEP of Indian Institute of Technology Patna is to impart knowledge related to the frontiers in science, technology, and management to the people, who want to upgrade their knowledge relevant to their field of interest.

IEEE STUDENTS

Institute of Electrical and Electronics Engineers (IEEE), Student's Branch, of IIT Patna opened with a group of students enrolled in various M.Tech and PhD courses with a view to promote technical activities in the campus, city and the state of Bihar. Now with the involvement of B.Tech students too, the branch organizes yearly lectures, IEEE programs and conferences.

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IEEE
Advancing Technology for Humanity

- NWoC (NJACK Winter of Code) is an initiative by the Open Source department of IIT Patna to get students (who have never participated in Free or Open Source Development before) involved in Open Source Contributions.
- A total of 42 projects from all the domains (like Web Development, Blockchain, Computer Vision, etc.) were offered which saw participation from around 1000 participants and 225+ colleges contributed.

Google
Summer of Code

- Students understand the importance to give back to community.
- A total of 25 students were selected in GSOC in last three years.
- Schools with the most accepted students for GSoC 2018: IIT Patna stood 8th all over the world
- A good number of students enrolled as mentor

COMPETITIVE CODING &

- Performance in various renowned competitions like Snackdown, Kickstart, Codejam has improved significantly. Regular contests are organized for the institute students by the club striving for excellence and perpetuating their enthusiasm in the competitive programming.
- NJACK Winter Training Program is a program run especially for beginners who want to learn some new technologies. Resources and Weekly tasks together with mentors were assigned to the interested.
- Students from IIT Patna also participated in all the events of Tech-Meet securing 7th rank and bagged silver and bronze medals in the year 2018.
- Also, students are engaged in various college clubs, fest and other activities throughout the year which help them to enhance their management and communication skills.
- Active participation of students in organizing the fests like Celesta, Anwesha and other activities throughout the year which help them to enhance their management and communication skills.
- Students enthusiastically engage themselves in various projects and community initiatives taken by DSC and other clubs. Various activities focusing on the holistic development of the students in the institute are organized by the clubs throughout

STUDENT'S

Achievements

- Ms. Pranjali Kokare has been selected to receive an **Adobe Research Women-In-Technology** Scholarship award for year 2017.
- Team 'Kisaan Connect' from IIT Patna, won 2nd prize, at the grand finale of **Hackathon v2.0** mobile app development contest.
- Mr. Sumit Asthana has been invited for the **Google Summer of Code Mentor Summit** 2016, a global event extending across 103 countries.
- Two B.Tech students received DAAD wise fellow scholarships.
- The Team "Butter Roti" went for **ACM-ICPC World Finals** twice bagging rank of 56 and 110.
- A student team compete robotics Asian College Robotics competition called **ABU Robocon** and secured 2nd in first stage and 21st in second stage and allowing us to compete in the finals at IIT Delhi.
- Tirthankar Ghosal's (Visvesvaraya PhD Fellow) writeup cam within the top 100 AWSAR_DST awards of 2018 in PhD category where he poured PhD vision and investigations into simplified words.

FACULTY'S

- Prof. Pushpak Bhattacharyya: Eminent Engineer Awardee.
- IIT Patna director is amongst the top ten AI researchers in India.
- Profs elevated to the grade of IEEE Senior Member:
  Dr. Rajiv Misra,
  Dr. Sriparna Saha,
  Dr. Somanath Tripathy,
  Dr. Jimson Mathew.
- Dr. Asif Ekbal awarded JSPS Fellowship.
- Dr. Sriparna Saha awarded NASI-YOUNG SCIENTIST PLATINUM JUBILEE AWARD.
- Prof. Pushpak Bhattacharyya has been invited to be the chair for NLP in IJCAI 2016, a flagship conference in Artificial Intelligence.

Chaitanya Kansal
- Associate, McKinsey & Company
- Program Manager, Microsoft

Ashutosh Agarwal
- Software Engineer, Google

Ankish Gupta
- Software Development Engineer, Logward
- Game Developer, Moonfrog Labs

Saswat Raj
- Software Development Engineer, Amazon Doppler

Abhinav Kohar
- Data Science Lead, Schlumberger
- Software Engineer, Microsoft
- Co-Founder, Kredit Konnection
- MS CS, University of Illinois at Urbana-Champaign
- Software Engineer, Honeywell

IIT PATNA HAS FORMED VALUABLE ALLIANCES WITH VARIOUS UNIVERSITIES ALL OVER THE WORLD

Kyoto University, Japan	Wright State University, Ohio
TUSSUR, Russia	IST, Lisbon
Innopolis University, Russia	Aalborg University, Denmark
University of Denver	Dublin City University
Università Ca' Foscari Venezia, Italy	National University of Singapore
National Informatics Center	University of Hartford, USA.
Louisiana State University	University of Saskatchewan

Teaching and research are the pillars on which the structure of an institute of higher learning rests. While education imparts knowledge, research advances knowledge's frontiers. The very foundation of IIT Patna is based on research and innovation. IIT Patna's research performance is comparable to that of any institute of top caliber. In 2017, citation per faculty stood at about 5, and 350 high-quality papers got published. A look at the home page of the institute reveals particulars of the noteworthy research that is going on in the institute.

Even among the undergraduate students, research culture is introduced as early as in the second year through a course: Innovation Lab, in which students execute a project of their own choice in small teams of two or three people. A heavy emphasis is given to the thesis component of the post-graduate programs.

Our research is also serving the needs of the state and society. Center for Earthquake Engineering and Center for Endangered Languages recently established through generous MPLADS funds of Hon'ble Member of Parliament Shri Harivansh Singh will facilitate highly relevant research in earthquake engineering.

Our faculty members are handling sponsored projects from the major Governmental funding agencies, including DeitY, DST, ISRO, DRDO, and CSIR. Also, our Institute has a good share of projects from various Governmental schemes, including Impacting Research Innovation and Technology (IMPRINT) and Ucchatar Aavishkar Yojna (UAY). Presence of an Incubation Center (IC) and Technology Business Incubator (TBI) on our campus paves the way for the conversion of the research output into innovative products that can contribute to the society at large. In this, the research scholars of our Institute have to play a pivotal role.

Companies are contacted by the Placement office or Placement cell (authorized student representatives) and invitations are extended, providing relevant information and the placement

Companies are given an exclusive login id in the website after they submit the filled-in job announcement forms (JAF) via email or fax.

The JAFs are made available online, which helps the willing students to register for the same.

The Placement Cell and the Company confer and finalize the date for preplacement talks if necessary.

During the pre-placement talk the company team can interact with the students and impart to them, an idea of what the company requires.

Each student who has registered for a particular company submits resume so that the company can shortlist the students accordingly.

A detailed schedule is prepared by the Placement Cell evaluating the job offer, prospects, student intake and the like. The schedule is confirmed with all the companies

The companies/organizations visit the campus, meet the registered (or shortlisted as the case may be) students, and conduct the interviews, tests or group discussion sessions in accordance with their respective recruitment process. The date of the interview and other sessions should be in compliance with the mutually confirmed schedule discussed earlier.

The companies are required to prepare and submit, with a written confirmation letter the list of students who are selected after the interview process, on the day of the interview itself.

 # The job offer letters are to reach the Placement Cell, in due course of time.
In case a student gets a job offer, he/she is not entitled to appear for further tests/interviews
by any other company.

Internships

RESEARCH INTERNSHIP

- GEORGIA TECH
- UNIVERSITY OF MISSOURI
- NTU, SINGAPORE
- NTHU, TAIWAN
- IIT MADRAS
- IIIT DELHI
- IIT BOMBAY
- IISC BANGLORE
- SINGAPORE UNIVERSITY OF TECHNOLOGY

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