

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

About IIT-H



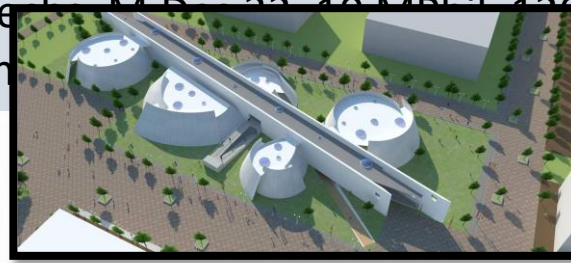
Kandi (permanent) campus



- Started in Aug 2008
- Ph.D program in Jan 2009
- M.Tech program in Aug 2009
- 14 Departments covering all major engineering, sciences and humanities
- BTech, MTech, MDes, MPhil, MSc, PhD degrees offered

- ~2350 students (950 BTech, 504 MTech, 140 MDes, 22, 40 MPhil, 120 MSc)
- Effective

*Next phase
of buildings
coming up*



Department Strength (Aug 2018)

Students

- BTech: 191
- Masters: 160
- PhD: 62
- Total: 413

Faculty

- Regular: 20 (1 full, 9 Associate & 10 Assistant Profs)
- Adjunct: 1



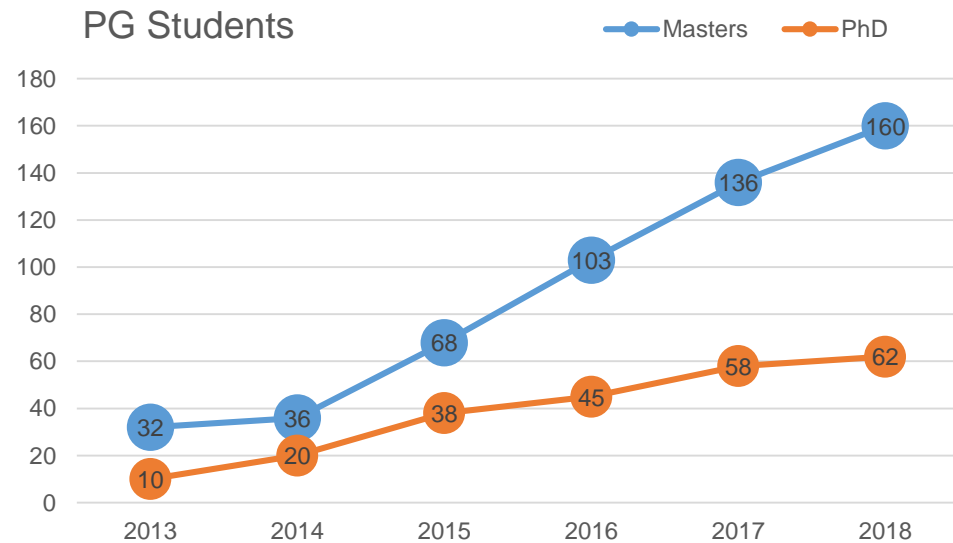
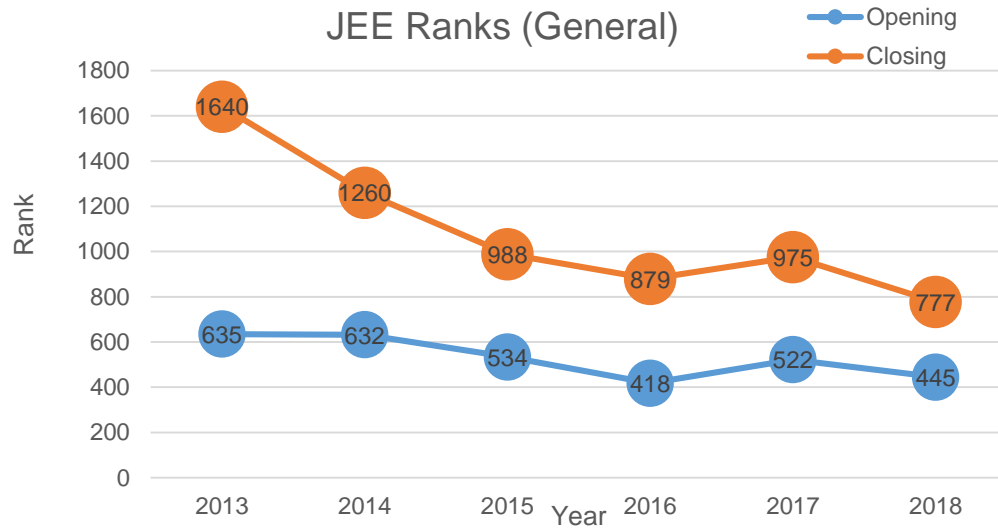
CSE faculty with director and other guests (Oct 2016)



Student diversity

Program	Male	Female	Total
B.Tech.	170	21	191
Masters	131	29	160
Ph.D	43	19	62

Dept Background/Highlights



Programs Offered @ CSE

B.Tech, MTech and PhD (Computer Science)

Option to get PhD degree jointly from IITH and Swinburne University (Australia)

MTech in Machine Intelligence (jointly with EE)

M.Tech in Data Science

- A unique online program for working professionals

Other

- B.Tech (Engineering Sciences)
- Popular Minor & Double Major for students from other streams
- CEP Certificate Courses on Foundations of Predictive Analytics & Big Data Analytics for Industry/Academia

Funding for PhD is available thru

MHRD scholarship

IDRBT PhD scholarship

- Candidate completes course-work at IITH. For rest of his/her PhD, candidate spends most of the time at IDRBT Hyd campus.
- Academic rules and the award of degree are as per the IITH norms
- One adviser each from IITH and IDRBT
- Stipend and other facilities are [as per IDRBT norms](#).

Project funded positions

- Industry-sponsored, e.g., Intel, Microsoft, SRC, TCS, etc.
- Government-sponsored, e.g., DST, DoT

Curriculum: Standout Features

1-credit Research Internship courses from 2nd year for B.Techs

3-credit Honors and Mini-project courses in final two years

2-year regular M.Tech and 3-year research-focused M.Tech

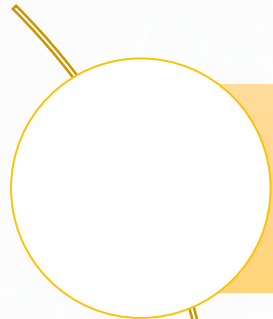
Unique course work based M.Tech for working professionals

Option to convert from B.Tech to dual degree, MTech to PhD

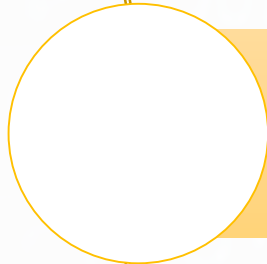
Direct PhD after B.tech & option to get both MTech & PhD degrees



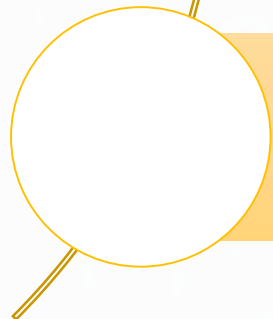
New Initiatives



2015: M.Tech program in Data Science for working professionals



2016: Samsung Digital Academy



2016-2018: Mentoring IIT Bhilai

Research Areas

Algorithms, Graph Theory, Game Theory

Complexity Theory, Quantum Computing

Networked Wireless Systems, Network Architecture

Modelling and Verification of Hybrid Systems

Video Content Analysis, Computer Vision

Machine Learning, Artificial Intelligence

Big Data Analytics, Large-Scale Machine Learning

Autonomous driving and Computer Architecture

Compilers, Programming Languages

Parallel Programming, Distributed Systems

Databases, Data Mining, Information Retrieval

Human-Computer Interaction, Information Visualization

Research Groups

Networks and Mobile Systems Group (3)

- Networked Wireless Systems (NeWS) Lab
- Practical Networks (PraNet) Lab

Data Science Research Group (7)

- Data Informatics Group (DIG)
- Visual Intelligence and Learning (VIGIL) Lab

Theoretical Computer Science Group (5)

Compilers and Verification Group (2)

Parallel and Distributed Systems Group (1)

Computer Architecture for Machine Learning Group (2)

R&D Thrust Areas

Center of Excellence in Data Science

5G, IoT & Smart Commute (ITS)

Mobile Social Networks & Computing

Behavioural Data Science -- AI and Deep Learning

Data analytics for real-time security and surveillance

Computational Epidemiology, autonomous driving

Storage and Retrieval Mechanisms

Middleware & Compiler optimization for HPC

Research Collaborations

Industry

- KDDI R&D Labs, Japan
- Microsoft Research, Bangalore
- IBM Research, Bangalore
- AMD, Bangalore
- ANURAG, DRDO
- RCI, DRDO
- NetApp, Bangalore
- LG Soft (R&D Division of LG Electronics)
- Uurmi Systems, Hyderabad
- Samsung Research India (SRI) Delhi
- Intel, Redpine Signals

Academic

- IISc, TIFR, CMI, IIT Delhi/Bombay
- UT Dallas, U of Pittsburgh, Penn State U, UCSD (US)
- INRIA, Paris, France
- Tel Aviv University, Israel
- Paris Tech, Eurocom, France
- Royal Holloway University of London, UK
- NTU and NUS, Singapore
- University of Tartu, Estonia
- Mid Sweden University, Sweden

External Funding

No. of R&D Projects Sanctioned	21 of budget approx. Rs. 17.52 Cr
No. of R&D Projects Ongoing	12 of budget approx. Rs. 12.75 Cr
No. of joint R&D Projects /w other depts & institutes	7 of total budget of approx. Rs. 81.18 Cr
No. of Consultancy Projects Sanctioned	4 of Rs. 17.8 L
No. of Computational Infrastructure Grants	2 or 2.4 Cr



NetApp



HITACHI
Inspire the Next







Sponsored Research Projects

Smart Cities for Emerging Countries based on Sensing, Networking and Big Data Analysis of Multimodal Regional Transport System (joint /w EE/CE depts. & other institutes in Japan)	JST/JICA SATREPS (2017-22)	38 Cr
Converged Cloud Communication Technologies (joint /w EE Dept)	Deity, Gol (2014-19)	24 Cr
Cyber-Physical Systems Innovation Hub (joint /w EE & ME Depts)	Deity, Gol (2011-16)	17.6 Cr
DISANET Group 4	JICA, SATREPS (2010-15)	2 Cr
An Efficient Software Framework for developing Reliable Multi-threaded Applications for Multi-Core Architecture (joint /w TIFR)	IMPRINT, MHRD (2016-18)	60 L
Mathematical Models & Morphological Analysis-based Algorithms for Image Comparison and Classification in Computer-based Vision System (joint /w EE Dept)	DST-RFBR (2013-14)	21 L



सत्यमेव जयते
Department of Science & Technology
Govt. of India

Sponsored Projects (contd.)

Prosodically Guided Phonetic Engine for Searching Speech Databases in Indian Languages (joint /w EE Dept)	DeitY, Gol (2012-13)	60 L	 <p>सत्यमेव जयते Government of India</p>  <p>GOVERNMENT OF TELANGANA సత్యమేవ జయతే</p>  <p>AMD</p>  <p>iNSERB DIA</p>
Data Analytics for Security and Surveillance (2015-18)	Govt. of Telangana	20 L	
Scalable Compiler Technologies for Modern Heterogeneous Architectures	AMD (2016-17)	\$120 00	
An Efficient Software Framework for High Performance Computing Systems	BRNS, DAE (2016-18)	35 L	
Conformal Prediction for Reliable Machine Learning	DST-EPSRC (Indo-UK), 2015	10 L	
Low Latency Network Architecture and Protocols for 5G Systems and IoT	SERB-EC (2016-18)	32 L	
Deep Learning for Embedded Computer Vision	RCI, DRDO (2016-17)	10 L	
Compilation Technologies for Secure Architectures (2016-17)	ANURAG, DRDO	10 L	

Sponsored Projects (contd.)

Architecture Design for the Control and Energy Management of an AC Microgrid (joint /w EE Dept)	Hitachi (2013-14)	17 L
Transportation Flow Modeling and Visualization for Disaster Management Applications	ANURAG, DRDO (2014-15)	10 L
An Efficient Middleware for Multi-Core Systems using Transactional Memory Systems	ANURAG, DRDO (2016)	10 L
Multi-link Communication Technology (2012-13)	KDDI R&D Labs, Japan	\$ 15000
Flight Operations Quality Assurance and Performance Optimization using Big Data Analytics (2016-18)	Honeywell	25 L



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Inspire the Next

KDDI
KDDI R&D LABS

Honeywell

Consultancy & Other Grants

Wireless Networks (2013-14)	Uurmi Systems, Hyderabad	7.2 L
Hardware architectures for autonomous driving	SRC USA (2018-2021)	\$36000
Deep Learning for Multimedia Analytics	Ekam Technologies, Bangalore (2016)	2.1 L
On Increasing Concurrency in Transactional Memory Systems	NetApp (2014)	5 L
Microsoft Summer Research Internship Grant	Microsoft (2016-17)	5 L
Infrastructure Grant	DST FIST (2017-22)	2.2 Cr
e-DRIShTI: Automatic Determination of Student Engagement for Personalized e-Learning	IBM Smarter Planet Grant (2014-16)	\$6000



See <https://cse.iith.ac.in/?q=Projects> for full details

Recent Achievements

Publications in top-tier venues

- ACM STOC'18, TOPLAS 2017, CP 2018, ICML 2018 , IEEE TBD'17, VLDB'16, KDD'15, IEEE TPAMI'15, PR'16, Algorithmica'16

Best Paper Awards

- IoT workshop @ TSDSI 2016
- IEEE ICACCI 2015, IEEE HiPC 2014
- 2nd rank in Pseudo-Boolean 2016

Fellowships/ Early-career research (ECR) award

- Intel India PhD Fellowships (3)
- Visvesvaraya PhD Fellowships (16)
- Young Faculty Fellowships (3), ECR awards (4), INSPIRE faculty award

Scholarships

- Google Anita Borg Scholarship 2016
- Viterbi and SN Bose Scholarships for Summer Internships @ US Universities
- Scholarships Summer Internships @ Purdue University
- Sakura Science Plan Summer Internships @ UoT, Japan 2016, 2017, 2018
- Google Venkat Panchpakesan Memorial Scholarship 2016

Recent Achievements

Open-source & standardization efforts

- TSDSI, NS-3 modules, OAI 5G Software Alliance, Cache Modeling tools



Contests

- 1st and 2nd prize in incomplete weighted MaxSAT in MaxSAT evaluations 2018
- Joint winner in Microsoft Hacking Contest, 2015
- 1st prize in Mobile and Web Application Testing, BugAthon 2015
- 2nd prize in TCS CodeVita Coding Challenge, 2015 (International)
- 1st prize in TCS CodeVita Coding Challenge, 2016
- Bronze medal at Inter IIT Tech Meet 2015 for the event Model Village



Others

- Hosted NCC 2018
- Google Summer of Code projects, 2015-2018 (to multiple students)
- MoU with Hyderabad city police to enhance safety of citizens by using analytics, 2016



M.Tech in Data Science

- Course work based degree for working professionals
- Live (synchronous) video lectures, remote attendance
- 35 students per batch
- Slow paced (3-5 years)
- 48 Credits (equivalent to regular MTech)
- Assignments graded remotely
- One visit per semester



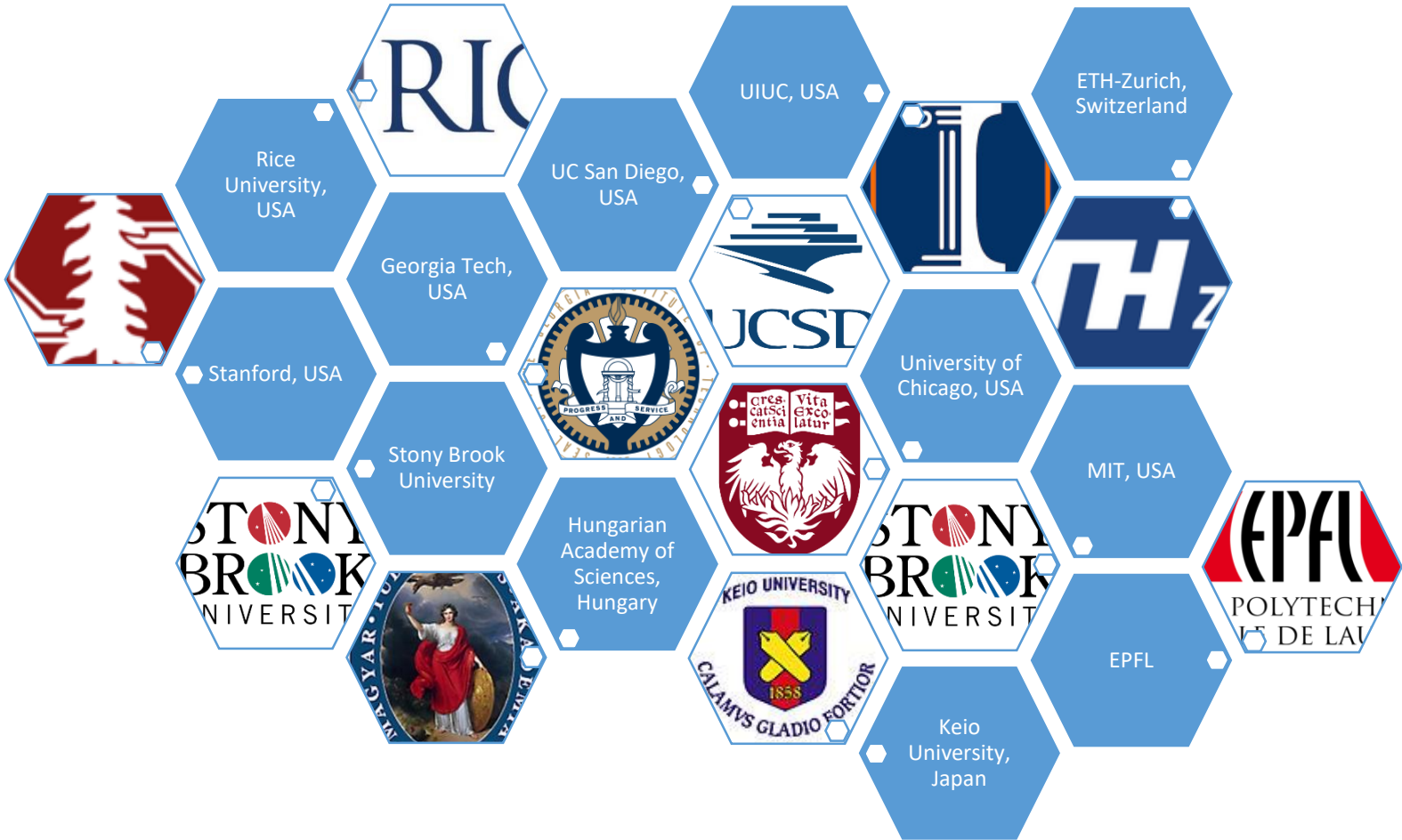
4*4 Display wall showing instructor & active participants in a live class

Placements

	2014	2015	2016	2017	2018
B.Tech.	33/35	35/44 (5 - Higher education)	40/44	35/43 (3 - higher education)	32/42 (7 – high study)
M.Tech.	10/11	13/14(1 external candidate)	17/18	13/13	28/31 (1- high study)
Package (per annum)	Highest : 22L; Lowest : 5L	Highest : 29L (India); Lowest : 6L	Highest: 35L Lowest: 6L	Highest: >30L; Lowest 6L	Highest: 40L Lowest: 5.4L
Top Hiring Companies	Amazon, Microsoft, Dell, StrandLife, NVIDIA, eBay, IBM, Samsung, Deloitte etc.	Amazon, Microsoft, Yahoo Japan, Google, Dell, Flipkart, Samsung, Snapdeal	Yahoo Japan, Murata, Hikari Tsuchin, Qualcomm, Securifi, UHG, Paypal, Practo, Deshaw, Dell, Walmart, Paypal, Oracle, Honeywell, Bank of America,	Rakuten, Amazon, Qualcomm, Oracle, Samsung, Walmart, Mathwork, Dell, Microsoft, Delloitte, Adobe Systems, Yahoo Japan, PayPal, etc.	Rakuten, GE, Flipkart, Microsoft, Samsung, Yahoo Japan, Walmart, Xilinx, Amazon, DE Shaw, etc.



CSE graduates doing higher studies @



Media coverage

- IITH develops dataset to understand online user engagement ([The Hindu](#))
- IITH develops AI-enabled software to catch bike riders without Helmet ([Times of India](#))
- Coverage in technical news websites: [InsideHPC](#), [HPCWire](#), etc.

Entrepreneurial Activities

Three start-ups

- Plianto Technologies (<http://www.plianto.com/>) by Dr. Sobhan Babu
- StoryXpress by students
- Kaddi Labs by students

Plianto Technologies



Plianto Technologies



Plianto Technologies is an ERP products development company incubated at IIT Hyderabad campus. Plianto Technologies is developing ERP products to verticals like Education and Hospitality. Main aim of Plianto Technologies is developing reasonably priced ERP products which are robust and flexible using open source technologies.

Contact Details

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How to Reach Us

We are located in IIT Hyderabad campus. For more directions visit page

It is started by people with passion for technology and rich domain expertise in areas like Database systems, Analytics, Academic administration. Currently we are concentrating on ERP products for Higher Education Sector.

THE NEW INDIAN EXPRESS

Home > Cities > Hyderabad

IIT-H Students' Start-up: A 'Do-it-yourself' Model of Video Making

By J Deepti Nandan Reddy | Published: 15th March 2015 06:02 AM Last Updated: 15th March 2015 09:57 AM

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HYDERABAD: Shunning lucrative job offers and keeping away from campus interviews, a band of four Indian Institute of Technology, Hyderabad (IIT-H) students have embarked on the path of business and launched a start-up.

Ankit Mishra, Mudit Tanwani, Sanyam Kapoor and Chinmay Jindal have set up Storyxpress. A brand video which costs as less as five US dollars is what Storyxpress, a software application developed by them, offers. Started two years ago when Ankit and Mudit were in their third year and Sanyam Kapoor and Chinmay Jindal in the first year, Storyxpress evolved from a college startup idea to a full-fledged software application today. Storyxpress has won an award for student innovation among start-ups from the Hyderabad Software Enterprises Association (HYSEA).

Common Computing Resources

- 32+ high-end servers (Intel Xeon E5 Series CPUs)
- 60+ Workstations
- SDN switches, Cisco routers
- 2 SAN Storage Systems (30/50 TB)
- 50 Thin Clients, 60 Desktops
- GPGPU server with 6 Tesla K20X GPU cards
- IoT & Other Equipment
 - Microsoft Surface, FireEye Programmable camera, LeapMotion Controller
 - IoT devices (Odroid, RaspberryPi) & wireless dongles
 - UHD smart TVs & smart phones



Samsung Digital Academy



SRI DELHI

- IoT and Pervasive computing courses by Samsung Research India (SRI) Delhi @ IITH
- Signed MoU on academic & research collaborations
- IoT lab setup /w budget of 20 L
- Summer internships & campus placements



Other events



For updates ...



<https://www.facebook.com/cseiith>



https://www.twitter.com/cse_iith



<http://cse.iith.ac.in/>

Upcoming CSE-EE Department Building





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