

# EECS@IISc



DIVISION OF ELECTRICAL, ELECTRONICS,  
AND COMPUTER SCIENCES

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INDIAN INSTITUTE OF SCIENCE



DIRECTOR, IISc  
ANURAG KUMAR (ECE)



CHAIR, DIVISION OF EECS  
Y NARAHARI (CSA)



ELECTRICAL ENGINEERING (ESTD. 1911)  
UGC-Centre for Advanced Study  
CHAIR: G. NARAYANAN



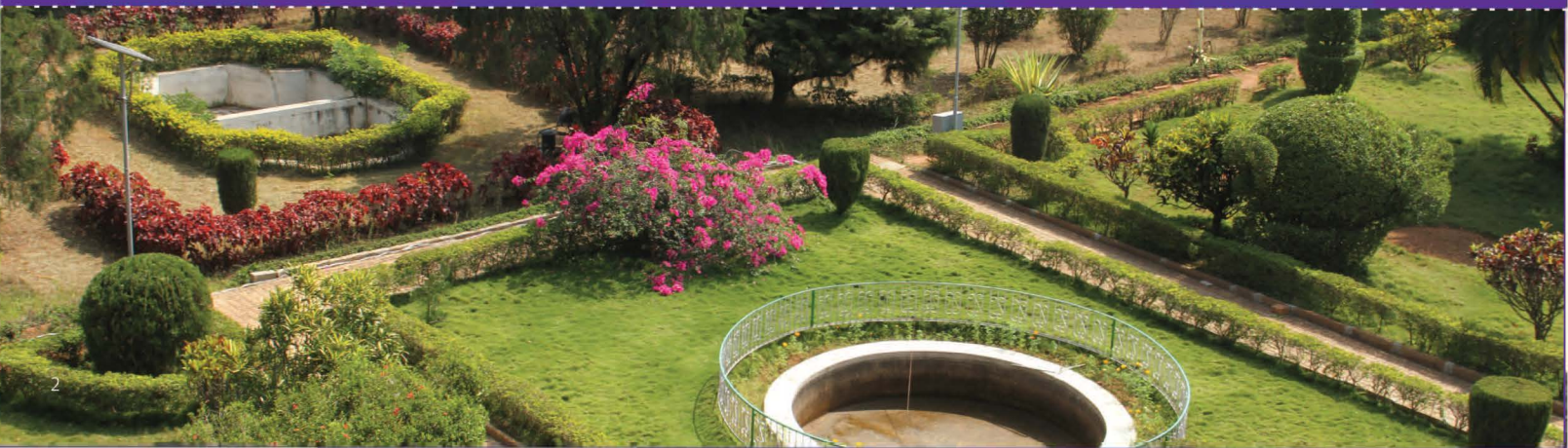
ELECTRICAL COMMUNICATION  
ENGINEERING (ESTD. 1947)  
UGC-Centre for Advanced Study  
CHAIR: A CHOCKALINGAM



COMPUTER SCIENCE AND  
AUTOMATION (ESTD. 1969)  
UGC Centre for Advanced Study  
CHAIR: SHALABH BHATNAGAR



ELECTRONIC SYSTEMS  
ENGINEERING (ETSD. 1974)  
CHAIR: JOY KURI



# Research Areas and Research Clusters

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## RESEARCH AREAS

The faculty members and students of the Division are seeking fundamental advances in the following core areas of EECS:

- Information Theory
- Signal Processing
- Communications
- Networks
- Electromagnetics
- Devices & Microelectronics
- Theoretical Computer Science
- Computer Systems
- Machine Learning
- Control & Optimization
- Image Processing
- Computer Vision
- Power Systems
- High Voltage Engineering
- Power Electronics

## RESEARCH CLUSTERS

A key feature of the Division's R&D activities is its focus on fundamental research driven innovation in contemporary, interdisciplinary themes:

- Artificial Intelligence
- Autonomous Systems
- Brain and Computation
- Cyber-physical Systems
- High Performance Devices
- Photonics
- Programming Languages and Software Engineering
- Security
- Smart Energy Systems
- Speech and Language Processing
- Storage Systems
- Visual Analytics
- 5G Systems

Please look up for more details: <https://iisc.ac.in/thematic-research-clusters/>



# Teaching Programs

The Division offers seven MTech Programs. Each program is of two years duration. These programs attract the brightest talent from all over the country. Three of these programs are jointly offered by pairs of departments.

M.Tech. (COMMUNICATION AND NETWORKS)



M.Tech. (MICROELECTRONICS AND VLSI)



M.Tech. (SIGNAL PROCESSING)



M.Tech. (ELECTRONIC SYSTEMS ENGINEERING)



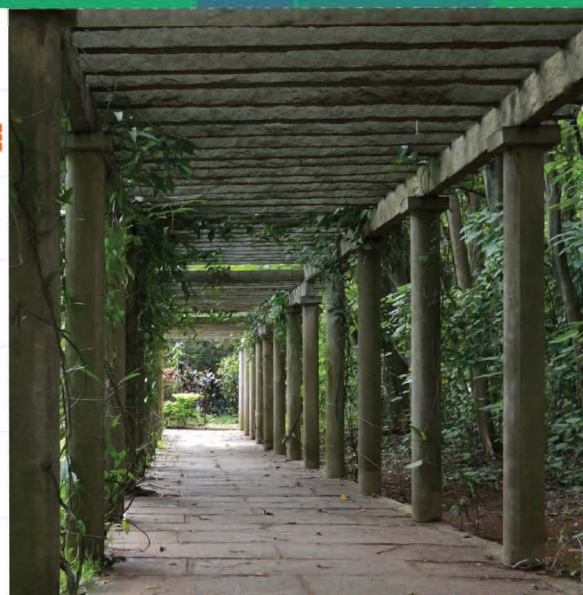
M.Tech. (ELECTRICAL ENGINEERING}



M.Tech. (COMPUTER SCIENCE & ENGINEERING)



M.Tech. (ARTIFICIAL INTELLIGENCE)



## STUDENTS (AS OF AUGUST 1, 2019)

PhD students (on roll)

345

MSc (Engineering)/MTech (Research) (on roll)

97

ME/MTech (on roll)

383

PhD Graduates during 2018

56

MSc (Engineering) Graduates during 2018

25

ME/MTech Graduates during 2018

149

# EECS in Numbers

## FACULTY AS OF AUGUST 1, 2019

83	Academic Faculty	14	Fellowships from IEEE, ACM, TWAS
14	Scientific Staff	18	Recognitions: Infosys Prize, Bhatnagar Prize, JC Bose Fellowships, ACCS-CDAC Prize, Vikram Sarabhai Research Award
8	Associate Faculty		
7	Adjunct Faculty	38	Fellowships from INSA, IASc, INAE, NASI
	Ravi Kannan, Microsoft Research	42	Swarnajayanti/ Young Scientist/ Young Engineer Awards
	Ramesh Hariharan, Strand Life Sciences	22	Editors/Associate Editors of IEEE/ACM/ International Journals
	Kumar Sivarajan, Tejas Networks		
	Shihab Shamma, University of Maryland		
	Venkat Padmanabhan, Microsoft Research		
	Vikram Srinivasan, Target Corporation		
	V. Chandrasekar, Colorado State University		

## RESEARCH PUBLICATIONS During 2018

	2018
Journal Publications	192
Conference Publications	260

## GOOGLE SCHOLAR PROFILE OF THE EECS DIVISION (As of December, 2019)

Citations	176,279
h-index	169
i-100 index	371
i-200 index	120
i-500 index	23
i-1000 index	6

## National Programs

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### FUNDING FROM NATIONAL AGENCIES

DST, DEITY, MEITY, DBT, MHRD, UGC,  
MINISTRY OF POWER, DRDO, ISRO,  
ADA, CDAC, CDOT, BEL

## Industry Projects

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### COLLABORATIVE PROJECTS

BOEING, XEROX RESEARCH, INFOSYS, AMD,  
MICROSOFT, INTEL INDIA, MOZILLA, SHAKTI  
FOUNDATION, BOSCH, NUCLEUS SOFTWARE,  
QUALCOMM, VOLVO, WIPRO, TCS, BRITISH  
TELECOM

### CONSULTING PROJECTS

BEL, SHELL, AOL, NETAPP, SAP, MINDTREE,  
WIPRO, EMC, EVIVE SOFTWARE ANALYTICS,  
INTEL, LGSOFT, DRDO, ALTIUM, NIMBIC,  
TETCOS, CDOT, CDAC, L&T, TOSHIBA

## Unrestricted Research Grants

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Google, Yahoo!, IBM, Microsoft Research, Amazon, Flipkart, Adobe Labs, Intel Labs, Accenture,  
NVIDIA, HP Labs, National Instruments, Nokia, Qualcomm

## International Collaborations

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Indo-US, Indo-UK, Indo-French, Indo-Israel, Indo-Swedish

Technion, Gavle, Glasgow, Southampton, CNRS, INRIA, KTH, TU-Delft,  
MIT, Harvard, CMU, Ohio State, Cornell, USC

# Distinguished Visiting Chairs

## PRATIKSHA TRUST CHAIRS IN NEUROCOMPUTING AND DATA SCIENCE

(funded by Mr. Kris Gopalakrishnan and Mrs. Sudha Gopalakrishnan)

### SHRI. K. VAIDYANATHAN CHAIR

Prof. Shihab Shamma, University of Maryland.....



### SMT. SUDHA MURTY CHAIR

Prof. Vasant Honavar, Pennsylvania State University.....



### PRATIKSHA TRUST CHAIR

Prof. Christos Papadimitriou, Columbia University.....



### SMT. RUKMINI GOPALAKRISHNACHAR CHAIR

Prof. Mike Norman, University of California, San Diego.....



Prof. Rakesh Agrawal, Data Insights Laboratories.....



Prof. Sargur Srihari, State University of New York, Buffalo.....



Prof Babak Falsafi, EPFL, Switzerland.....



### BEL CHAIR IN RADAR STUDIES

Prof. Goutam Chattopadhyay, JPL and CalTech .....



Prof. D.V. Giri, Pro-Tech.....



Prof. V. Chandrasekar, Colorado State University.....



### CPRI CHAIR PROFESSOR

Prof. Vijay Vittal, Arizona State University.....



Prof. T.S. Sudarshan, University of South Carolina.....



# Some Recent Highlights

## TECHNOLOGY STARTUPS

- Symyog Technology Private Limited (Design and signoff tools for automotive electronics)  
(Faculty Member: Dipanjan Gope, ECE)
- Mimyk (Immersive medical simulation technologies)  
(Faculty Member: Vijay Natarjan (CSA); Student: Nithin Shiva Shankar)

## RECENT INDUSTRY INITIATIVES

- WIRIN (Wipro-IISc Research Innovation Network) initiated in the area of AI and Autonomous Systems, with a funding of USD 1.5 Million over three years
- Collaborative initiative launched with Microsoft Research India in frontiers of computer science
- Major endowment from Mindtree Limited for setting up an Associate Professor Chair in the Division

## BEST PAPER AND DISSERTATION AWARDS

- Uday Kumar Reddy Bondhugula (CSA) receives the Most Influential PLDI Paper award for his PLDI2008 paper entitled, "A Practical Automatic Polyhedral Parallelizer and Locality Optimizer". ACM SIGPLAN presents these awards to the authors of a paper presented 10 years prior to the award year.
- ECE PhD student Prathamesh Mayekar's joint paper with faculty members Parimal Parag (ECE) and Himanshu Tyagi (ECE) wins the ISIT 2018 student paper award.
- ECE PhD student Lekshmi Ramesh's paper with faculty member Chandra Murthy (ECE) receives the IEEE ICASSP (2018) best student paper award
- ACM India Doctoral Dissertation Award: Dr. Palash Dey (CSA) bags the 2017 ACM India Doctoral Dissertation Award (Advisors: Y. Narahari and Arnab Bhattacharyya)

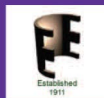
FOR MORE INFORMATION



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Electronic Systems Engineering  
[office.esa@iisc.ac.in](mailto:office.esa@iisc.ac.in)



Electrical Communication Engineering  
[office.ece@iisc.ac.in](mailto:office.ece@iisc.ac.in)