Research Ecosystem

Faculty and students in the Department conduct cutting edge research across three broad areas:

**Theoretical Computer Science**: Algorithms, complexity theory, graph theory, algorithmic algebra, automata theory, combinatorial geometry, computational geometry, computational topology, coding theory, cryptography, logic, formal verification, computational biology.

**Computer Systems and Software**: Computer architecture, multi-core systems and programming, parallelization, embedded systems, energy aware computing, operating systems, storage systems, database systems, distributed computing, cloud computing, systems security, mobile and wireless systems, cyber-physical systems, performance modeling, graphics, visualization, Programming languages, compilers, program analysis, software engineering.

**Intelligent Systems**: Pattern recognition, machine learning, Information theory and statistical learning, convex optimization, data mining, information retrieval, bioinformatics, social network analysis, network science, reinforcement learning, stochastic control and optimization, stochastic simulation, electronic commerce, game theory, auctions and mechanism design, cognitive systems.

Research in all these areas is consistently published in top-tier conferences and journals. Interdisciplinary research and collaborations with other institutions and industry are actively encouraged. Department faculty and students regularly receive industry-sponsored research awards and PhD fellowships.

The Department is recognized as a Centre for Advanced Study by the University Grants Commission. The Department faculty and students are involved in a number of high impact collaborative projects with global industry leaders such as Amazon, AMD, EMC, Google, IBM, Infosys Technologies, Microsoft, NetApp, Nokia, TCS, Xerox, and Yahoo!

Opportunities@CSA

The department has maintained an excellent reputation for high quality degree programs. Entry into all degree programs is highly competitive. All students are offered scholarships during their period of study, subject to satisfactory performance.

**Post-Doctoral/ Research Associate Fellowships**: The department invites accomplished Ph.D. graduates to apply for post-doctoral fellowships/research associate positions.

**PhD in Computer Science**: The Department offers an internationally competitive PhD program in computer science. Our PhD graduates are highly sought after, both for industry research positions and for academic faculty positions. Currently, we have on roll 100 PhD students.

**MSc (Engineering)**: This program offers an attractive research intensive program for BE/BTech/MSc graduates.

**ME (CSE)**: Flagship ME program of the Department; provides strong foundations via coursework as well as opportunities for research projects.

**ME (SSA)**: A unique blend of CS and Systems Science; offered jointly with the Department of Electrical Engineering.

**External Research Program (ERP)**: This program is open to employees of R & D organisations, global companies and engineering college teachers to pursue a PhD degree.

**Quality Improvement Program (QIP)**: This program is open to faculty members of AICTE affiliated engineering colleges to pursue a PhD degree or an ME degree.

**Summer School for Undergraduate Students**: The department hosts about 100 undergraduate engineering students for a summer school during June every year.

Apply to CSA and explore the frontiers of computer science. For more details and application deadlines, please look up http://www.iisc.ernet.in/students-corner/admissions.php
http://www.csa.iisc.ernet.in

To know more about us and for details of application procedures, visit us at

http://www.csa.iisc.ernet.in/