

**Area / Group Name: Knowledge Based Systems, Artificial Intelligence, Information Retrieval, Machine Learning**

Intelligent decision making methods and machine learning applications are used as main tools to create autonomous applications built upon knowledge bases. Each of the paradigms listed in this thrust area has huge potential for research and development. Areas of established strength and recent focus includes heuristic search, deduction, machine learning, and combinatorial optimization, ambient intelligence, natural language processing and formal verification. Cognitive Science Research Initiative is being undertaken by Department of Science and Technology, India. Defense Research & Development Organization (DRDO) and Centre for Artificial Intelligence and Robotics (CAIR) are working on intelligent decision making methods, technologies for soldier support, intelligent systems and situational awareness (SA). Data Engineering is a thrust area identified by Computer Society of India (CSI). MHRD has stressed studies on Cognitive Science in its 12th plan. IEEE established technical committee on Semantic Committee in 2004. ACM has promoted research in this area as SIGEvo was established in 2005 and ACM Transactions on Computer-Human Interaction (Started 2003) and computational logic started 2003.

Research in this area is supported by fundamentals strengthened through courses like Data Mining, Artificial Intelligence, Software Computing, Pattern Recognition and Natural Language Processing. Currently, **33** faculty members are working in this broad area. **Five** Ph.D.s have been completed and **20** more are in progress. Around **110** research papers and **1 Book Chapter** has been published. **42** M.Tech. and more than **320** B.Tech projects have been completed in this area. Ph.D. and M.Tech students are exploring preprocessing and Post-processing challenges in AI and data mining, sentiment analysis and big data analytics using advanced Hadoop and MapReduce frameworks. The research project under this thrust area was funded by research grants worth ~ **30 Lac** from Government of India, All India Council for Technical Education.

JIIT has started a new M.Tech program in Data Analytics in 2015