

**Proceedings of the Third National Conference
on Computational Intelligence
NCCI 2019**

December 6th & 7th, 2019

Organized by



**DEPARTMENT OF COMPUTER SCIENCE
KRISTU JAYANTI COLLEGE (AUTONOMOUS)**

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Karnataka, India

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Message From Principal



The advancement of new technology has been taking place since the beginning of human history. Over the years, technology has revolutionized our perspective of the world. It has created amazing tools and resources, putting each person's most useful information at their fingertips. Modern technology has made it possible for the discovery of many functional and utility devices like the smart watches and the smart phones. With all of these revolutions, technology has also made our lives easier, faster, better and more fun. The future of technology is even more interesting than what is happening right now. In few years, we will be talking about driverless cars and robots working in factories. We're in the golden age of innovation, an era in which digital technology is transforming the underpinnings of human existence.

Research activities across all the fields pave the way for the world to strive forward with huge advancements. As an educational institution, encouragement and support to research can be provided by establishing a suitable platform for the research community, to interact with each other and to share the knowledge. Having this objective, "Second National Conference on Computational Intelligence (NCCI 2018)", was organized last year which received an overwhelming response.

NCCI 2019 has been planned to provide the same benefits and learning experience to all the participants. Sessions on different domains, key note addresses from eminent professors and opportunity to network with the researchers will help the participants immensely in their research career. I believe strongly that, this will stand as a great source of knowledge for the researchers. With great pleasure and pride, I welcome all the participants and convey my best wishes for NCCI 2019. I congratulate the Department of Computer Science and all the authors of NCCI 2019.

Message From Vice Principal



Technology depends upon innovation and innovation upon the advancement of technology; that is certainly the case with Computational Intelligence. Good science produces theories that are explored through experimentation and the experiments, depend upon the theories for direction. The discipline of Computational Intelligence is one such technology with ancient roots. The fundamental feature of human intelligence is creativity. New ideas can be created by producing novel combinations of familiar ideas, by exploring the potential of conceptual spaces and by making transformations that enable the generation of previously impossible ideas.

I congratulate the Department of Computer Science for the initiatives taken to bring the researchers across the nation in a common platform. I am confident that this conference will provide a stage to present and share the research findings for further enhancement and perfection. I am delighted to note that the accepted papers are being published in *Journal of Physics: Conference Series (JPCS)* – A SCOPUS indexed journals.

I wholeheartedly appreciate all the sincere efforts of the entire team of NCCI 2019 and wish them a grand success.

Message From Dean



Advanced computer education is lying at the fringe of the computer based sociotechnical processes in our society. As an outcome, improvement of various computer applications for various fields and purposes has additionally turned into an objective. Satisfying the prerequisites of the latest information systems call for ideal computational science education.

NCCI 2019 strives to be one of the most far reaching meetings concentrated on the different aspects of Computer Science and Computational Intelligence. It is certain to be the stage for scholastic and industry experts to examine ongoing advancement in the field of Computational Intelligence. The reason for this gathering is to make a logical commitment to the field of computational knowledge through dialogues and publications in Computational Intelligence.

Special appreciation to the convenor and the organizing committee. We trust the delegates can acquire useful information from the proceedings. We look forward to the contributions during discussions and publications providing the foundation for future developments in computational intelligence.

On behalf of the Organizing and Advisory Committee we take great pleasure in welcoming the delegates to the conference to foster the progress in the field by contributing with your expertise.

Message From Conference Chair



Information Technology has taken the forefront surpassing agricultural transformation and industrial revolution. It is this magnificent power of computing that is prompting the utilization of Information Technology in each segment of human activity be it communication, banking, education, amusement, administration, etc. Similar to machines that have broadened man's mechanical power and his accommodation and solace, Information Technology, is expanding the mind and scholarly power of humankind. The term Information technology has expanded to include numerous parts of processing and innovation, and the term is more conspicuous than any other time in recent memory.

The Third National Conference on Computational Intelligence (NCCI 2019) conceives to unite interdisciplinary analysts researching the interface between software engineering and the domains of bioscience. Discussions as this will be instrumental in creating novel strategies for data mining, representation and simulation. We sincerely believe this gathering will be a platform for scientific exchange of ideas and to provide an opportunity for the dissemination of the latest results in research among the range of experts in the field of Computational Intelligence.

I sincerely hope that One day of healthy interactions and proactive exchange of ideas will prove to be fruitful and contribute immensely to our mutual growth. I congratulate the participants, Delegates, Organizing Committee, faculty members and students for their outstanding contribution in organizing this conference successfully.

Message From Conveners

Department of Computer Science is organizing the Third National Conference on Computational Intelligence (NCCI 2019).

The major objective of this conference is to provide a common platform to academicians, research scholars and students from India to share their ideas & research experiences in various aspects of Computational Intelligence.

The conference will definitely provide a platform to discuss the problems in the area of Computational Intelligence viz. Fuzzy logic, Neural networks, Evolutionary computation, Artificial Intelligence, Network, IOT etc.

We extremely thank our management, Keynote speakers, advisory committee members, participants, reviewers, session chairs, organizing committee Members and all those who have helped us to organize this National Conference to make it a success.

We thank our publication partner IOP Science Publishing for publishing the accepted papers in the *Journal of Physics: Conference Series (JPCS)* – a SCOPUS indexed journal.

Prof. Ayshwarya B

Dr. Stephen R

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