

# Preface

The most recent advancements in the dynamically expanding realm of Internet and networking technologies have provided a scope for research and development in computer science and its allied thrust areas. To provide a broad interdisciplinary research forum, the International Conference on Computational Intelligence, Cyber Security and Computational Models (ICC3 2015) is organized by the Department of Applied Mathematics and Computational Sciences of PSG College of Technology, during 17–19 December 2015.

The principal objective of this conference is to discuss the state-of-art scientific approaches, techniques and results to explore the cutting-edge ideas and to promote collaborative research in the areas of computational intelligence, cyber security and computational models to enable establishing research relations worldwide.

Computational intelligence (CI), a dynamic domain of modern information science, has been applied in many fields of engineering, data analytics, forecasting, biomedicine and others. CI systems use nature-inspired computational approaches and techniques to solve complex real-world problems. The widespread applications range from image and sound processing, signal processing, multi-dimensional data visualization, steering of objects to expert systems and many other potential practical implementations. CI systems have the capability to reconstruct behaviours observed in learning sequences and can form rules of inference and generalize knowledge in situations when they are expected to make prediction or to classify the object to one of the previously observed categories. CI track consists of the research articles which exhibit various potential practical applications.

Cyber security landscape is evolving rapidly, as the attacks are increasing in number and sophistication from a wider range of threat actors than ever before. The large-scale cyber attacks in various countries lead to the threat of information security which in turn could be a threat to national security and requires effective crisis management. Such information security risks are becoming more diversified, advanced and complex, and many conventional means of security fail to ensure information safety. Cyber security track in this conference aims to be a forum for the presentation of developments in computer security and for bringing together

researchers and practitioners in the information security field to exchange practical ideas and experiences.

Computational experiments are inevitable in this era, because analytical solutions to many scientific problems may not be obtainable or be tedious to derive. Theory of computation, data analytics, high-performance computing, quantum computing, weather forecasting, flight simulation, Earth simulator, protein folding and so on need computational models like stochastic models, graph models and network models to make predictions about the performance of complicated systems. Solutions of numerous technical problems require extensive mathematical concepts to model the problem and to understand the behaviour of associated complex systems through computer simulations. With the advent of efficient computations, solutions can be found for various problems using computational modelling and research in the domain is gaining significance.

This is reflected in an increase in submissions to ICC3 2015 over the previous edition. We received 177 papers in total, and accepted 56 papers (31 %). Every submitted paper went through a rigorous review process. Where issues remained, additional reviews were commissioned.

The organizers of ICC3 2015 wholeheartedly appreciate the peer reviewers for their support and valuable comments for ensuring the quality of the proceedings. We also extend our warmest gratitude to Springer Publishers, for their continued support in bringing out the proceedings volume in time and for excellent production quality. We would like to thank all keynote speakers, international advisory committee members and the chair persons for their excellent contribution. We hope that all the participants of the conference would have been benefited academically and wish them success in their research career.

This ICC3 series traditionally results in new contacts between the participants and interdisciplinary communications realized often in new joint research. We believe that this tradition will continue in the future as well. The next ICC3 conference will be held in PSG College of Technology, Coimbatore in 2017.

Computational Intelligence, Cyber Security and  
Computational Models

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