# Editorial

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**Biographical notes:** Neeraj Kumar received his PhD in CSE from Shri Mata Vaishno Devi University, Katra, India and MTech in CSE from Kurukshetra University, Kurukshetra, Haryana. He has more than ten years of experience in teaching and research in the area of theoretical computer science and mobile computing addressing the issues such as routing, security, QoS, optimisation, cache consistency and management, handoff mechanisms and learning algorithms. He has more than 50 publications in reputed peer reviewed journals and conferences including IEEE, Elsevier, Springer, Taylor & Francis, and Inderscience. He is a reviewer of many international journals of repute. He has edited/editing special issue of more than five journals of repute.

Naveen Chilamkurti is currently working as a Senior Lecturer at Department of Computer Science and Computer Engineering, La Trobe University, Australia. He received his PhD from La Trobe University. He is also an inaugural Editor-in-Chief for *International Journal of Wireless Networks and Broadband Technologies* starting in March 2011. He has published about 121 journal and conference papers. His current research areas include wireless multimedia, wireless sensor networks, nano communications, V2I and V2V

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Sherali Zeadally received his Bachelor in Computer Science from University of Cambridge, England, and his doctoral degree in Computer Science from University of Buckingham, England in 1996. He is an Associate Professor at the University of the District of Columbia, Washington DC, USA. He currently serves on the editorial boards of over 15 peer-reviewed international journals. He is a Fellow of the British Computer Society and a Fellow of the Institution of Engineering Technology, UK. His research interests include computer networks including wired and wireless networks, network/system/cyber security, mobile computing, ubiquitous computing, RFID, multimedia, performance evaluation of systems and networks.

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In the past few decades, there has been a tremendous growth of various types of wireless applications with the fast proliferation of heterogeneous wireless devices and communication networks. But with the advancement of these applications and communication devices, several challenges and constraints have emerged for the research community. To address these challenges, we need to provide practical solutions to areas such as routing, security, end-to-end delay and mobility management. To cope with all these issues, multi-constraints algorithms can provide efficient solutions in the presence of various constraints. This special issue aims to address the simultaneous optimisations of different parameters in the presence of various constraints. After a rigorous review process, we have selected four high-quality quality papers addressing some of the aforementioned challenges.

In the first paper, Awasthi et al. proposed a coordinated checkpointing protocol for mobile distributed systems that minimises mutable checkpoints. The authors have investigated the problem of taking unnecessary checkpoints and designed an efficient coordinated checkpointing protocol that is non-blocking, and requires the coordination of only a minimum number of processes and reduces the overhead of unnecessary checkpoints significantly. The proposed protocol almost eliminates the number of unnecessary checkpoints.

The second paper by Sondi et al. proposed a multiple metric QoS-aware implementation of the optimised link state routing protocol. The authors have described how QoS metrics values are estimated and disseminated. They have formulated and showed how the multipoint relays can be selected as a QoS metric criterion by minimising the number of multipoint relays in order to ensure flooding optimisation.

The third paper by Iqbal et al. analysed a group-based activity-led learning for network planning and management. The authors proposed a group performance model to deploy activity-led learning effectively in the network planning and management module aimed at master degree level courses. The model provides a structure within which

students are introduced to activity led learning pedagogical methodology. The model systematically helps to facilitate group formation and allows group integration and cooperation by developing 'common ground' amongst group members. To evaluate the usage of group performance in activity led learning, the authors performed group performance analysis using a fuzzy rule-based classification model. The results of the analysis showed that the application of group performance model resulted in a reduction in the overall time spent on tasks while achieving better grades. Moreover, the group performance model supports coordination among student activities and overcome inter-personal issues to achieve better overall performance in shorter times compared to groups where a group performance model has not been applied.

The fourth paper by Djarallah et al. focuses on multi-constraints path computation for inter-domain QoS capable services. The authors proposed a novel procedure that enables a forward discovery of multiple inter-domain sequences and the computation of constrained inter-domain paths for the multiprotocol label switching traffic engineering label switched path. Moreover, they have also investigated the issues around the inter-domain path computation, such as route discovery and inter-domain loop avoidance. The authors have evaluated their proposed scheme using performance metrics such as the message overhead, success ratio at run time and demonstrated that the proposed scheme is better than the existing schemes with respect to these metrics.

We thank all authors who have submitted their works for consideration for publication in this special issue. We express our gratitude to all reviewers for their efforts in helping us select the best papers for this issue. Finally, we thank the editor-in-chief, Professor Sudip Misra, for his constant encouragements and support throughout the preparation of this special issue. We sincerely hope you will enjoy reading the selected papers as much as we did.