Editorial

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Biographical notes: Arvind Dhaka received his PhD in Computer Science and Engineering from the NIT Hamirpur, India (An Institute of National Importance), in 2018. Since 2018, he has been working as an Associate Professor in the Department of Computer and Communication Engineering, Manipal University Jaipur. His research interests include wireless communication, wireless sensor networks, ad-hoc networks, medical image processing, machine leaning, and deep learning in image processing.

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Edmar Candeia Gurjão is graduated in Electrical Engineering from the Universidade Federal da Paraíba in 1996, Master's in Electrical Engineering from the Universidade Federal da Paraíba in 1999 and PhD in Electrical Engineering from the Universidade Federal de Campina Grande in 2003. He is also a Visiting Professor at the Notre Dame University, USA in 2012 and a Professor of Electrical Engineering Department at the Universidade Federal de Campina Grande. He also completed his in Master's in Science and Technology in Health at the Universidade Estadual da Paraíba. His experience in electrical engineering with emphasis in compressed sensing, software defined radio and signal processing and cybersecurity. He is a senior member of IEEE and member of the Brazilian Society of Telecommunications (SBrT) and a co-author of *Introduction to Signal and Systems* (in Portuguese) in 2015 and *Digital Signal Processing*, Momentum Press in 2018.

Dijana Capeska Bogatinoska is an Associate Professor with over two decades of expertise in industry and academia, demonstrates proficiency in leading and contributing to cutting-edge research projects in various areas of computer science. Her strong specialisation includes web development, database systems, algorithm design, data science, and smart technologies. With a successful track record in project management and active involvement in EU-funded initiatives, she fosters creativity, exploration, and collaboration in her academic endeavours.

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This special issue focuses on the infrastructure for cognitive wireless communications cognitive wireless communications, data analytics, and behaviour prediction cognitive wireless communications. Technologies such as artificial intelligence (AI) and cognitive computing are bringing about a sea change in the way mobile networks are designed, managed, and operated. It is anticipated that these technologies will make a significant contribution to the development of mobile networks of the future generation.

Cognitive computing, which is derived from cognitive science and data analytics, has the potential to replicate or increase human intelligence. Additionally, it holds a great deal of promise for the development of intelligent wireless communication networks. In the realm of cognitive wireless communications and networking, AI, machine learning (ML), and other cutting-edge approaches are being used for various innovative wireless communications and other context-aware and emotion-aware services.

The management of contextual data and the finding of in-depth information for cognitive wireless communications, vehicle communications, software-defined networks, virtual reality, and cache-enabled networks are all examples of intelligent wireless communications and networking architecture. This special issue provides an overview about the use of AI and cognitive computing in mobile networks is still in its early stages, but these technologies have the potential to revolutionise the way we design, manage, and operate mobile networks. As AI and cognitive computing technologies continue to develop, we can expect to see even more innovative applications in the future.

A number of new and exciting opportunities for future theoretical development and empirical testing are provided by the authors of this special issue. We hope that readers will find interesting avenues for future research in these papers.