

Message from the Editor-in-Chief

Dapeng Oliver Wu 

As we begin the new year of 2019, we celebrate the sixth anniversary of the *IEEE Transactions on Network Science and Engineering (TNSE)*. In the meantime, I would like to cordially thank the authors, readers, the editorial board, the steering committee, and the staff members for their contributions, service, and support to *TNSE* in the past year.

The status of *TNSE* in 2018 is reported as below.

- The total number of new submissions in 2018 has been increased by 50 percent, compared to that in 2017. This shows another year of significant advance, a good indicator of a healthy and continuous growth of *TNSE* and the community.
- Best Paper Awards have been established to recognize top quality *TNSE* papers in the past years. The inaugural Best Paper Award will be announced around March 2019. Outstanding Editor Awards will be announced afterwards to recognize the best Associate Editors for their outstanding service to the *TNSE* community. Best Reviewer Awards will also be created to recognize the essential contribution that peer-reviewers make to ensure the quality of the papers published in *TNSE*.
- The average days from submission to first decision have dropped to around 65 days. The average days from submission to final decision have dropped to around 90 days. These are due to the diligence and efforts of editors and reviewers.

In addition, three special issues have been launched to solicit articles on timely and relevant topics. Next I introduce these three special issues.

The first special issue is on big data and artificial intelligence for network technologies. Recently, huge amount of data, called big data, across different sectors such as banking, healthcare, retail and education, is creating the needs for efficient tools to manage those data. Artificial intelligence (AI) has become the powerful tools in dealing with big data with recent breakthroughs at multiple fronts in machine learning, including deep learning. Meanwhile, information networks are becoming larger and more complicated, generating a huge amount of runtime statistics data such as traffic load, resource usages. The emerging big data and AI technologies may include a bunch of new requirements, applications and scenarios such as e-health, Intelligent Transportation Systems (ITS), Industrial Internet of Things (IIoT), and smart cities in the term of computing networks. The big data and AI driven network technologies also provide an unprecedented opportunity to discover new features, to characterize user demands and system capabilities in network resource assignment, security and privacy, system architecture, modeling and applications, which needs more explorations. It is believed that these explorations will greatly benefit the academia and Information and Communication Technologies (ICT) industries. Thus, there are urgent needs to study big data and AI for network technologies; and this special issue provides a venue for publishing research results in this area.

The second special issue is on network science in biological and bio-inspired systems. Biological and bio-inspired systems can be represented as networks of interacting components, resulting in protein-protein interaction networks, neuronal networks, metabolic networks, gene regulatory networks, signaling networks, swarm networks, and so on. Recent years have witnessed the advances in understanding the organizational and functional principles of these networks. Indeed, biological and bio-inspired networks have been one of the most active fields of network science. Given the growing activity of both theory and applications across computer science, physics and biology, the aim of this special issue is to provide a venue for researchers with different backgrounds to discuss the fruitful results, recent advances and challenges in this interdisciplinary area.

The third special issue is on network of cyber-social networks: modeling, analysis, and control. Network of cyber-social networks (NCN) is a promising new area that has recently attracted significant interest. Its core differentiator is the tight conjoining among heterogeneous cyber-social networks or between cyber networks and physical networks. Over the past decade, we have witnessed an unprecedented growth of communication networks and online social networks in cyber world that “teleports” us to interact with remote people and/or objects. With the development of cyber technologies, heterogeneous networks become increasingly interdependent. Until recently, these heterogeneous networks were mostly treated as separate entities, leaving their complex interactions unexplored. The focus of this special issue is to address the interdependence of NCN components that facilitates its modeling, analysis, and control.

Dapeng Oliver Wu
Editor-in-Chief

For information on obtaining reprints of this article, please send e-mail to:
reprints@ieee.org, and reference the Digital Object Identifier below.
Digital Object Identifier no. 10.1109/TNSE.2019.2892790