

---

## Editorial

---

### Sam Ma

Computational Biology and Medical Ecology Lab,  
Kunming Institute of Zoology,  
Chinese Academy of Sciences,  
Kunming 650223, China  
Email: ma@vandals.uidaho.edu

**Biographical notes:** Sam Ma is a CAS 100 endowed Professor and Director of Computational Biology and Medical Ecology in the Chinese Academy of Sciences (CAS). He received his double PhD degrees in Computer Science and Entomology, both from the University of Idaho, USA. He is a member of London-based Faculty 1000 of Biology and Medicine and his research interests include reliability, security and survivability of computer networks, computational intelligence, evolutionary game theory, computational biology and bioinformatics, ecological networks and medical ecology of the human microbiome. He is the founding Editor-in-Chief of the *International Journal of Network Science*.

---

This is the era of networking. The internet of information highway is extending to the internet of things (IoT). Our life depends on networks, from transportation network to mobile phone network, from power grid network to bank payment network, from the internet to virtual social networks. The critical national infrastructures of our economy and society heavily depend on computer networks. A *science of networks* was born at the beginning of the new century thanks to the efforts of generations of scientists and technologists. Network science or using a less ambitious term, network analysis, offers powerful tools to study complex multidimensional, multivariate, and dynamic relationships in nature and society. While network science is a primary theme of this journal of network science, computer networks and related topics are certainly still important.

This present issue covers both network science and computer networks, including five contributions from active researchers in their respective fields. ‘Correlation coefficient analysis: centrality vs. maximal clique size for complex real-world network graphs’ by Natarajan Meghanathan investigated the correlation between the *centrality values* observed for nodes (a computationally lightweight metric) and the maximal clique size (a computationally hard metric), which has a potential to help the computation of the latter metric. ‘Cyber security testing and intrusion detection for synchrophasor systems’ by Thomas Morris et al. presented the process to establish qualified security requirements for installing a *synchrophasor system*, which is an emerging technology for protecting critical national infrastructures. Ivan Belik’s contribution titled ‘The analysis of split graphs in social networks based on the *k*-cardinality assignment problem’ applied the split graph model for studying the interactions between *cliques* (socially strong and trusty groups) and *independent sets* (fragmented and non-connected groups), as a potential approach to detect risky interactions within social networks. In the paper titled ‘Enhanced dynamic source routing protocol for detection and prevention of *sinkhole attack* in mobile

ad hoc networks' by Immanuel John Raja Jebadurai et al. presented a secondary cache-based approach to detect and prevent the sinkhole attack, which can disrupt the routing in the mobile ad hoc networks. The final paper of this issue, 'On the calculation of inter-domains point to multipoint paths in MPLS networks' by Mohamad Chaitou, offered an algorithm for computing point to multipoint (P2MP) traffic engineered paths that cross several *multi protocol label switching* (MPLS) domains.

I thank the authors for their contributions and look forward to receiving more quality submissions for the *International Journal of Network Science*.