

Peer-to-Peer Networking and Applications

~Special Issue Call for Papers~

“Software Defined Networking: Trends, Challenges and Prospective Smart Solutions”

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Peer-to-Peer Networking and Applications invites papers for a topical collection (special issue) on Software Defined Networking: Trends, Challenges and Prospective Smart Solutions.

The constraints of currently implemented networks (e.g., vendor dependence, complex and time consuming activities of implementing network-wide policies, adding and moving devices, high risk of service disruption, inability to scale easily) were seeming to put a stasis in meeting the networking requirements and challenges posed by evolving computing trends (e.g., changing traffic patterns, big data and associated needs, the rise of cloud services, and consumerization of IT and technology trends).

To cope with the challenges, Software Defined Networking/Network Function Virtualization (SDN/NFV) is at the forefront and going to become the backbone of application economy. SDN, a game changer technology and an important transformational force, is an advanced form of network virtualization. It physically separates the network control plane from the forwarding plane (data plane) to control several devices and to manage the network services through abstraction of low-level functionality. It provides support for the dynamic, scalable computing and storage needs of current complex digital networks and allows adaptive control and operations of networks in a cost-effective manner.

Various efforts in presenting the solutions from conventional and non-conventional approaches are seen in literature in support of offering the best out of SDN technology. Apart from it, intelligent techniques (swarm intelligence, neural networks, artificial intelligence, fuzzy logic and genetic algorithms, deep learning, machine learning) are also incorporated in designing the smart solutions. Whatever the model\design\architecture\solution is, it is appreciable that it intends to transcend today's available technologies and in doing so is capable of identifying technology gaps based on varied requirements.

This special issue is to provide a forum for researchers from both academia and industry to share their latest achievements on Software Defined Networking: Trends, Challenges and Prospective Smart Solutions.

Papers addressing one or more of the topics below are of particular interest:

- Emergence role in softwareization
- Standardization, protocols and layering architectures
- Intelligent algorithms, frameworks and architectures
- Implementation issues and prospective solutions
- QoE assessment and management tools and techniques
- Automation, troubleshooting and management tools
- Dynamic resource provisioning and management
- Testing, security, privacy and reliability
- Traffic and data engineering

PAPER SUBMISSION:

- Authors are encouraged to submit high-quality, original work that has neither appeared in, nor is under consideration by, other journals.
- All papers will be reviewed following standard reviewing procedures for the Journal.
- Papers must be prepared in accordance with the Journal guidelines: <http://www.springer.com/12083>
- Submit manuscripts to: <http://PPNA.edmgr.com>. Choose “to be inserted by Springer” as the article type.

Peer-to-Peer Networking and Applications www.Springer.com/12083

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- Efficient, secure, and real time Information flow
- Robust control, network control and information-based control management
- Integration of SDN-enabled mobile and fixed networks for various services (VoIP, multimedia, content delivery, etc.)
- SDN in smart environment; social networking, smart homes, smart logistics, smart grid, etc.
- Challenges in deploying software defined networks alongside conventional networks
- Applications, challenges and solutions of SDN Integration with emerging technologies, internet of things, network function virtualization, cloud computing, virtual switches, etc.
- Simulation and modelling of design, deployment and operation
- Orchestration API, orchestration of virtual resources
- Northbound and southbound programming
- Programming and debugging of SDN elements and system

This special issue will publish as a topical collection, linking all papers to the virtual online issue immediately via article links and an identifying tag.

IMPORTANT DATES:

- **Paper submission deadline: 15 July, 2017**
- **First Decision to Authors: 15 September, 2017**
- **Final manuscript due: 15 October, 2017**

AHMED E. KAMAL, IEEE Fellow, Senior Member ACM, is currently serving as a Professor at Department of Electrical & Computer Engineering, Iowa State University. He has more than 250 research publications in renowned journals (e.g., IEEE Wireless Communications, IEEE Communication Magazine, Computer Networks, IEEE/ACM TON, ACM Computing Survey, WCMA, IEEE TOC, Computer Communications) and conferences (e.g., GLOBECOM, High Performance Switching and Routing, INFOCOM, Optical Networking and Communications, ICC, IEEE WCNC). He has been editor of the books "Resilient Wireless Sensor Networks: The Case of Network Coding", and "Traffic Grooming for Optical Networks: Foundations and Techniques" and author of many book chapters. He has been engaged as an editorial board member, guest editor and reviewer of a good number of reputed journals like IEEE Communications Surveys and Tutorials, Optical Switching and Networking Journal, Computer Networks Journal, International Journal of Communications Systems, IEEE/ACM Transactions on Networking, IEEE Transactions on Wireless Communications, and ACM Transactions on Sensor Networks. He also served as organizer, general co-chair, TPC Member, and session chair in many conferences including GLOBECOM, INFOCOM, ICC, HONET, MOWNET, EIT, MCIT, ICNC and CNSR. He has supervised more than 50 Ph.D. and MS students. He has also supervised many senior design projects. He is presently serving as PI/co-PI of "Soil Sensors and their Wireless Underground Network for Precision Farming and Environmental Management" from the National Science Foundation and "Survivability Strategies for Multi-Hop Wireless Networks" from National Plan for Science and Technology projects, apart from a long list of completed grants. His research interests include Computer Networks, Photonic and Optical Networks, Software Defined Networking, Cognitive Radio Networks, Wireless Sensor Networks, Wireless and Mobile Networks, Network Coding and Applications, and Performance Evaluation

Liangxiu Han is a Reader in Computer Science, at School of Computing, Mathematics and Digital Technology, Manchester Metropolitan University, where she is Deputy Director for two centres: Informatics Research Centre and the Man Met Crime and Well-Being Big Data Centre, and leads Future Networks and Distributed Systems (FUNDS). Dr. Han's research areas mainly lie in the development of novel architectures for large-scale networked distributed systems (e.g., Cloud/Grid/Service-oriented computing/Internet, data intensive computing), large-scale data mining (application domains include web mining, biomedical images, environmental sensor data, network traffic data, etc.), and knowledge engineering. Having worked in both industry and academia, Dr. Han has over 14 years of research and practical experience in developing intelligent ICT-enabled software solutions in different application domains (e.g., health, smart cities, bioscience, cyber security, energy, etc.). As a Principal Investigator (PI) or Co-PI, Han has been conducting research in relation to large-scale data processing, data mining, cloud computing, software architecture (funded by EPSRC, BBSRC, Innovate UK, Horizon 2020, Industry, Charity, respectively, etc.). Dr. Han has published over 70 peer reviewed international journals and book chapters. Dr. Han is a member of EPSRC Peer Review College, an independent expert for Horizon 2020 proposal evaluation/review and British Council Peer Review Panel. She is also a reviewer for various reputable journals such as Journal of Parallel and Distributed

Computing, Journal of Information Science from Elsevier science, IEEE Transaction on Service Computing, Brain Computing, IEEE Transaction on Biomedical Imaging engineering, Bioinformatics, Brain Informatics, Clustering Computing, and is a program committee member of various international conferences. As a conference organizer (chair or co-chair), Dr. Han has organized various international conferences and workshops such as EISC 2015 and UIC 2016, and has been a guest editor for a number of special issues, such as IEEE Access.

Lu Liu is a Professor of Distributed Computing at the Department of Electronic, Computing and Mathematics in the University of Derby, UK. Dr Liu received his Ph.D. from University of Surrey (funded by DIF DTC) and MSc in Data Communication Systems from Brunel University. Prof Liu's research interests are in areas of computer networking, cloud computing, service-oriented computing and peer-to-peer computing. Prof. Liu has secured many research projects, which are supported by UK research councils, BIS and British Council, as well as leading industries in the world. Prof. Liu has over 120 scientific publications in reputable journals, academic books and international conferences. He was recognized as a Promising Researcher by University of Derby in 2011, and received the BCL Faculty Research Award in 2012. Prof. Liu serves as an editorial board member of 6 international journals and the guest editor for 7 international journals. He has chaired over 20 international conference workshops and presently or formerly serves as a program committee member for over 50 international conferences and workshops. He is a Fellow of BCS.

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