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# Digital Communications and Networks

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## Editorial: Special issue on “mobile edge computing”

Mobile Edge Computing (MEC) has seen its fast growth in the past years. MEC, taking advantage of the computation capabilities in edge devices, elegantly offloads the computation burden from cloud computing, but provides a much improved end-to-end latency. MEC has a wide range of applications, such as 5G wireless networking, Internet of Things (IoT), and collaborative autonomous vehicles. One big need driving the future MEC is new network communications, architectures, and protocols that enable the data to move and compute in the mobile edge devices and networks.

The purpose of this special issue is to survey the current research progress and literature in MEC and propose new communication and networking solutions for future MEC applications.

We have received many papers in response to the call for papers of this special issue. After going through a rigorous review process, seven papers have been accepted for publication in this special issue.

The first paper, titled “Recent advances in mobile edge computing and content caching”, presents a survey on advances of content caching in mobile edge computing, including caching insertion and expulsion policies as well as the behavior of the caching system and caching optimization based on wireless networks.

The second paper, “A survey of edge computing-based designs for IoT security” by Kewei Sha, is a comprehensive survey of existing IoT security solutions at the edge layer. The surveyed topics consist of edge-based IoT security research efforts in the context of security architecture designs, firewalls, intrusion detection systems, authentication and authorization protocols, and privacy-preserving mechanisms.

The third paper, “SPEMS-MES: similar physical entity matching strategy for mobile edge search”, uses mobile edge technology to improve the delay and accuracy performance of entity search by processing user requests on the edge side for mobile edge search.

The fourth paper authored by He, Wang, and Wang has the title “Mobility-driven user-centric AP clustering in mobile edge computing-based ultra-dense networks”. This paper proposes a novel Ultra-Dense Network (UDN) architecture based on MEC, in which each MEC server is associated with a user-centric Access Point (AP) cluster to act as a mobile agent. It then leverages mobility prediction algorithms to achieve a dynamic AP clustering scheme, in which the cluster structure can automatically adapt to the dynamic distribution of user traffic in a specific area.

The paper, “Digital hate content reduction with mobile edge computing: an architecture”, proposes a MEC architecture for regulating and reducing hate content at the user level. The profiling of hate content

is obtained from the results of various research, including quantitative and qualitative analyses. An architectural framework is developed to regulate and reduce hate content at the user level in the mobile computing environment.

Another paper, “anonymous data collection scheme for cloud-aided mobile edge networks”, proposes an energy-efficient and anonymous data collection for mobile edge networks to keep a balance in energy consumption and data privacy. The sensors’ private information is hidden during data communication. The residual energy of sensor nodes should be taken into consideration when it comes to selecting a relay node.

The last paper, “Distributed privacy protection strategy for MEC-enhanced wireless body area networks”, presents a privacy protection strategy for MEC-enhanced wireless body area networks, which leverages the blockchain-based decentralized MEC paradigm to support efficient transmission of privacy information with low latency and high reliability within a high-demand data security scenario.

We appreciate all the authors submitting their original and novel research works to our special issue. And we would also like to give thanks to all the reviewers for their time and effort in providing insightful and constructive comments.

**Prof. Shaoen Wu** received his Ph.D. degree in Computer Science and Software Engineering from Auburn University, his MS degree in Control Theory and Engineering from the University of Electronic Science and Technology of China (UESTC), and his BS degree in Automation from Qingdao University of Science and Technology (QUST). He serves on the Advisory Council of Scholarship for the Vice Provost for Research, and the Dean’s Faculty Advisory Board. He served as the assistant department chair in the academic year of 2018–2019. He was featured in the spotlight story of the Ball State Research Magazine 2015. He is a senior member of IEEE, the secretary of IEEE MMTC 2018–2020, and a member of ACM. He has worked as an assistant professor in the School of Computing at the University of Southern Mississippi, a Staff Scientist at ADTRAN, and a Member of Technical Staff at Bell Labs, Lucent Technologies. He has published over 70 peer-reviewed papers in wireless, IoT, smart health, and robotics at international Journals, e.g., *IEEE Internet of Things Journal*, and conferences, e.g., IEEE Globecom, ICC, and ICCCN. His research has been generously supported by NSF, NASA, Cisco, NVIDIA, Intel, Dell, ARM, Cypress Inc., Microsoft, and Ball State Aspire Program. He has received two Best Paper Awards, a Faculty Excellence Award, and a The First Place in Graduate Student Forum. He has actively served as a Chair/Co-Chair at several international conferences and an

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editor for a few international journals.



**Prof. Periklis Chatzimisios** serves as an Associate Professor, the Director of the Computing Systems, Security and Networks (CSSN) Research Lab and a Division Head in the Department of Informatics at the Alexander TEI of Thessaloniki (ATEITHE), Greece. Dr. Chatzimisios obtained his Ph.D. from Bournemouth University (UK) in 2005 and his B.Sc. from ATEITHE (Greece) in 2000. He is involved in several standardization and IEEE activities, serving as a Member of the Standards Development Board for the IEEE Communication Society (ComSoc), IEEE ComSoc Standards Program Development Board and IEEE ComSoC Education & Training Board as well as Vice Chair of the Technical Committee on Big Data (TSCBD) and Vice Chair of the IEEE ComSoc Technical Committee in Information Infrastructure and Networking (TCIIN). He is the editor/author of 8 books and more than 120 peer-reviewed papers and book chapters on the topics of performance evaluation and standardization activities of mobile/wireless communications, IoT, Big Data and vehicular networking. His published research work has received more than 2800 citations by other researchers.



**Prof. Fabrizio Granelli** is an Associate Professor at the Dept. of Information Engineering and Computer Science (DISI) of the University of

Trento (Italy) and IEEE ComSoc Director for Educational Services (2018–2019). From 2012 to 2014, he was an Italian Master School Coordinator in the framework of the European Institute of Innovation and Technology ICT Labs Consortium. He was ComSoc Director of Online Content (2016–17). Prof. Granelli was the Dean of Education of the DISI Department for the period 2015–2017, and coordinator of the research and didactical activities on computer networks within the degree in Telecommunications Engineering. He was advisor of more than 80 B.Sc. and M.Sc. theses and 8 Ph.D. theses. He was an IEEE ComSoc Distinguished Lecturer for 2012-15 and Visiting Professor at the State University of Campinas (SP, Brazil) and The University of Tokyo (Japan). He is author or co-author of more than 200 papers published in international journals, books and conferences in networking, with particular reference to performance modeling, cross-layering, wireless networks, cognitive radios and networks, green networking and smart grid communications.



**Prof. Riduan M. Abid** is currently an Associate Professor of computer science at Al Akhawayn University in Ifrane, Morocco. He started as a lecturer of Computer Science in 2000 after graduating with a Master of Science in Computer Science from Al Akhawayn University. In 2006, he received the Fulbright Excellence scholarship and joined Auburn University, the USA, for a Ph.D. in Computer Science.

