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Security Considerations for Mobile Edge Computing

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 Digital Media Center Theatre
 November 16, 2023 - 03:00 pm

Abstract:

Mobile Edge Computing (MEC) is a technology framework that brings computational resources, including processing power, storage, and network connectivity, closer to mobile devices and users. In MEC, these resources are deployed at the edge of the cellular network, typically in close proximity to cell towers and base stations. This contrasts with traditional cloud computing, where data processing and storage occur in centralized data centers that can be distant from the end-user.

Key aspects and features of MEC include Low Latency, Proximity, Resource Optimization, Scalability, Context Awareness and Security. Security measures are implemented at the edge to protect sensitive data and ensure the integrity of the network. This can include encryption, access control, and authentication mechanisms. Applications and use cases of MEC are diverse and include AR/VR, IoT, Content Delivery, Connected Vehicles, Smart Grids. MEC is also a critical component in the evolution of 5G networks.

The talk will enable researchers to develop an in-depth understanding of MEC Security, including the security of Federated Learning, a privacy preserving paradigm under the umbrella of Edge Computing.

Speaker's Bio:

Dr. Rajeev Shorey is the former CEO of the University of Queensland – IIT Delhi Academy of Research (UQIDAR) at IIT Delhi, India. Rajeev serves as an adjunct faculty in the Computer Science & Engineering department at IIT Delhi. He is an Honorary Professor at the University of Queensland, Australia and an Honorary Visiting Professor at several institutions in India.

Rajeev received his Ph.D. and M.S. (Engg) in Electrical Communication Engineering from the Indian Institute of Science (IISc), Bangalore, India in 1996 and 1991 respectively. He received his B.E degree in Computer Science and Engineering from IISc, Bangalore in 1987.

Rajeev career spans several reputed research labs – TCS Research & Innovation, General Motors (GM) India Science Laboratory, IBM India Research Laboratory and SASKEN Technologies. Dr. Shorey served as the first President of NIIT University from 2009 to 2013 before joining the TCS Research Labs in 2014.

Rajeev's work has resulted in more than 75 publications in international journals and conferences and several US patents, all in the area of wireless and wired networks. He has 13 issued US patents and several pending US patents to his credit. Dr. Shorey serves on the editorial board of the IEEE Internet of Things Journal and Springer's Journal of Wireless Networks. His areas of interest are Wireless Networks including 5G Networks, Telematics, IoT, Industrial IoT, IoT Security and Automotive Networks, including the intersection of AI, Machine Learning and Communication Networks.

For his contributions in the area of Communication Networks, Rajeev was elected a Fellow of the Indian National Academy of Engineering in 2007. He was recognized by ACM as a Distinguished Scientist in December 2014. He was elected a Fellow of the Institution of Engineering and Technology (IET), UK in 2021. He was selected as the Distinguished Lecturer of the IEEE Future Networks Technical Community in October 2023.

Rajeev serves on the Executive Council of ACM India and the Executive Council of IEEE ComSoc, Delhi Chapter. He is the co-founder & steering committee co-chair of two of the highly reputed conferences – COMSNETS (www.comsnets.org) and AIMLSYSTEMS (www.aimlsystems.org).

