KEYNOTE/PLENARY

Title:

Advancing Security for 6G Smart Networks and Services

Speaker:

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Abstract

6G Smart Networks and Services are poised to shape civilization's development in 2030, supporting the convergence of digital and physical worlds. The arrival of 6G networks brings unprecedented challenges and opportunities, requiring robust security measures to safeguard against emerging threats. Thus, several complementary issues must be addressed to advance the security of 6G smart networks and services. ROBUST-6G is a European research project which explores a multi-faceted approach to 6G security, addressing key areas of security of 6G smart networks and services such as distributed trusted AI/ML, explainable security, zero-touch holistic end-to-end (E2E) security, energy efficient security and privacy enablers, real-time resilience for timing-sensitive 6G software technologies and quantum-safe 6G communications. We comprehensively investigate the security and privacy challenges associated with integrating these technologies into 6G networks and their possible direction to mitigate them.

Biography

Dr. Madhusanka Liyanage is an Associate Professor/Ad Astra Fellow and Director of Graduate Research at the School of Computer Science, University College Dublin, Ireland. He is leading Network Softwarization and Security Labs (NetsLab) at the UCD School of Computer Science, a dynamic research group leading the charge in enhancing the security and privacy of next-generation mobile networks, including 5G and 6G. He is also an adjunct professor at the University of Oulu, Finland, the University of Ruhuna, Sri Lanka, and the University of Sri Jayawardhanepura, Sri Lanka. He received his Doctor of Technology degree in communication engineering from the University of Oulu, Oulu, Finland 2016. He also received the prestigious Marie Skłodowska-Curie Actions Individual Fellowship and the Government of Ireland Postdoctoral Fellowship during 2018-2020. In 2020, he received the "2020 IEEE ComSoc Outstanding Young Researcher" award by IEEE ComSoc EMEA. In 2021,2022, 2023 and 2024, he was ranked among the World's Top 2% Scientists (2020, 2021, 2022 and 2023) in the List prepared by Elsevier BV, Stanford University, USA. Also, he was awarded an Irish Research Council (IRC) Research Ally Prize as part of the IRC Researcher of the Year 2021 awards for his positive impact as a supervisor. In 2022, he received "the 2022 Tom Brazil Excellence in Research Award" from the SFI CONNECT Center. Moreover, Madhusanka received a Special Commendation for IRC Early Career Researcher of 2022 by the Irish Research Council, Ireland. Dr Liyanage's research interests are 5G/6G Security, Blockchain, Artificial Intelligence (AI), Explainable AI and Federated Learning (FL) security, Network Slicing, Internet of Things (IoT) and Multi-access Edge Computing (MEC). He has co-authored over 250 publications, including three authored books, four edited books and several patents in the mobile network security domain. He is also an expert consultant at the European Union Agency for Cybersecurity (ENISA) and a Funded Investigator of the Science Foundation Ireland CONNECT Research Centre, Ireland. Moreover, he is an expert reviewer for different funding agencies in Europe, Asia, and Oceania.