

Machine Learning and Security for Virtualized Environments in 5G Networks and Beyond

Dia 06/05/2021 das 18:00 às 20:00 horas - Virtual

5G networks are expected to support numerous novel services and applications with different quality of service (QoS) requirements such as high data rates and low end-to-end (E2E) latency. Network slicing has been proposed to cope with this challenge, calling for efficient slicing and slice placement strategies in order to ensure that the slice requirements are met, while the network resources are utilized in the most optimal manner. In this colloquium, Dr. Boutaba and the GTA group discuss challenges in next generation networks, such as service chain fault-tolerance, network function secure orchestration and placement, and autonomous threat mitigation. We discuss possible solutions for these problems using cutting edge technologies, such as reinforcement learning, network function virtualization, blockchain technology, and optimization techniques. Furthermore, Dr. Boutaba suggests and presents available open-source platforms that allow the development of solutions using the mentioned technologies.

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Raouf Boutaba is a University Research Chair Professor and the Director of the David R. Cheriton School of Computer Science at the University of Waterloo, Canada. Dr. Boutaba received the Bachelors degree from the Badji Mokhtar Annaba University, Algeria (1988), a M.S. degree from the Université de Pierre et Marie Curie (now Sorbonne Université), France (1990), a Magister degree from Annaba University in collaboration with the University of Glasgow, Scotland (1993), and a Ph.D. degree from the Université de Pierre et Marie Curie Sorbonne University (1994), all in Computer Science. His primary research interests are in the areas of network and service management. Dr. Boutaba has published more than 500 papers in world leading conferences and journals in these areas, received 15 Best Paper awards, and holds/filed 15 patents. He has

served as a distinguished speaker of the IEEE Communications Society (2005-2010) and the IEEE Computer Society (2002-2004), and has given numerous keynote and invited talks in conferences worldwide.