

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING

Website: <https://cde.nus.edu.sg/ece>

Area: Communications & Network

Host: Associate Professor Mohan Gurusamy

TOPIC	:	Machine Learning-based Dynamic Resource Allocation Mechanism for Next-Generation Network Slicing
SPEAKER	:	Mr. Wu Binghui Graduate Student, ECE Dept, NUS
DATE	:	Tuesday, 25 October 2022
TIME	:	1.00PM to 2.00PM
WEBINAR	:	Join Zoom Meeting https://nus-sg.zoom.us/j/86494154012?pwd=bWFGVGVOVFRTY2F1SkIWbGpJcERKUT09 Meeting ID: 864 9415 4012 Passcode: 410903

ABSTRACT

Network slicing is the critical enabler for next-generation mobile networks, which divides the infrastructure into multiple logical networks known as slices. Each logical network supports services with specific throughput and latency requirements. The fifth-generation(5G) and 5G-beyond networks employ more than two slices; hence, it has become necessary to deploy algorithms for efficient resource allocation. However, given the latency-sensitive applications, allocating resources to different slices based on the current demand would be a poor choice. Therefore, resource allocation needs to be performed in advance, which calls for forecasting algorithms predicting future demands. We propose a novel predictive network slicing mechanism named NPRA to predict resources and allocate resources dynamically. NPRA predicts the future resource requirements using Unit Time Long Short-Term Memory (UT-LSTM). The predicted demand can be used as input to a DQN model for the timely allocation of resources. We also develop a 5G simulation testbed to generate datasets for performance study.

BIOGRAPHY

Mr. Wu Binghui is currently working towards his MEng degree in electrical and computer engineering at the Communications & Networks Laboratory, National University of Singapore, Singapore. His research interests mainly focus on machine learning-based methods for the resource allocation of wireless communication and networks.

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