SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
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Area: Communications & Networks

Host: Assoc Prof. Mohan Gurusamy

TOPIC	:	**Reinforcement Learning-based Dynamic Service Placement in Vehicular Networks**
SPEAKER	:	**Ms. Anum Talpur** **Graduate student, ECE Dept, NUS**
DATE	:	**Friday, 11 December 2020**
TIME	:	**3.00PM to 4.00PM**
WEBINAR	:	**Join Zoom Meeting** **https://nus-sg.zoom.us/j/84949616838?pwd=d25Yd0tWQTNlSzliMjRQUjR0R25ldz09** **Meeting ID: 849 4961 6838** **Password: 867415**

ABSTRACT

The emergence of technologies such as 5G and mobile edge computing has enabled the provisioning of different types of services with different resource and service requirements to the vehicles in a vehicular network. The growing complexity of traffic mobility patterns and dynamics in the requests for different types of services has made service placement a challenging task. A typical static placement solution is not effective as it does not consider traffic mobility and service dynamics. We present a reinforcement learning-based dynamic (RL-Dynamic) service placement framework to find the optimal placement of services at the edge servers while considering the vehicle's mobility and dynamics in the requests for different types of services. We use SUMO and MATLAB to carry out simulation experiments. In our learning framework, for the decision module, we developed an integer linear programming (ILP) based problem formulation for two alternative objective functions - minimizing delay and minimizing edge server utilization. We show that RL-based dynamic service placement achieves low service delay and higher fairness with lower edge-server utilization.

BIOGRAPHY

Anum Talpur is currently pursuing a Ph.D. in the Department of Electrical and Computer Engineering, National University of Singapore. She received M.Eng in Communication Systems and Networks as a joint program from Pakistan and Ireland in 2016. Her research interests include Internet of Things (IoT), Machine Learning, Network Slicing, Edge-Computing, and Security in 5G.

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