

## SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING  
COLLEGE OF DESIGN AND ENGINEERING

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

**Area: Communications & Networks (CN)**

**Host: Assoc Prof Mohan Gurusamy**

TOPIC	:	Dependency-aware GNN-guided Proactive Task Scheduler for Cloud-Edge Systems
SPEAKER	:	Mr Jiang Jiaxu Graduate Student, ECE Dept, NUS
DATE	:	Friday, 14 November 2025
TIME	:	11:00AM-11:30AM
VENUE	:	Join Zoom Meeting <a href="https://nus-sg.zoom.us/j/87590537380?pwd=1z4wHbles5GAG0qZKc0EIDqNY6Nvx.1">https://nus-sg.zoom.us/j/87590537380?pwd=1z4wHbles5GAG0qZKc0EIDqNY6Nvx.1</a> Meeting ID: 875 9053 7380 Passcode: 819340

### ABSTRACT

The increasing number of latency-critical applications has shifted toward hybrid cloud-edge architectures, where scheduling interdependent tasks presents significant challenges. Existing approaches often manage dependencies reactively, leading to suboptimal resource utilization. Therefore, we propose DGTS (Dependency-aware GNN-guided Proactive Task Scheduling) Framework for Cloud-Edge systems. Our approach first trains a GNN offline to learn task priorities from dependency graph structures. When a new task set arrives, the pre-trained GNN model is used to proactively infer priorities online. This learned structural importance then guides a dynamic scheduling algorithm in making real-time, intelligent offloading and preemption decisions.

### BIOGRAPHY

Mr. Jiang is currently an MEng student under Prof. Mohan Gurusamy. His current research focuses on task scheduling and edge computing for IoT. Prior to this, he obtained his BEng degree at Xi'an Jiaotong University.

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