

DL Tour in the Sacramento Chapter

DL's Name: Zuqing Zhu

Time: 2:00pm on Mar. 8, 2019

Location: Kemper Hall Room 1131, University of California, Davis

Local hosts: Prof. Massimo Tornatore

Title: Predictive Analytics in Hybrid Optical/Electrical DC Networks

Cost to ComSoc: Zero, since this trip was combined with Dr. Zhu's business trip to San Diego.

Talks abstract:

For datacenter networks (DCNs), it is always important to have an effective network orchestration scheme that can coordinate the usages of IT and bandwidth resources timely. In this talk, we consider the hybrid optical/electrical DCNs (HOE-DCNs) and propose a knowledge-defined network orchestration (KD-NO) system for them. The KD-NO system follows the predictive analytics in human behaviors, which includes forecasting based on memory and decision making based on knowledge. To explain the design of our KD-NO system, we first discuss how to fetch low-level knowledge from the telemetry data about the resource utilization in an HOE-DCN. Then, we describe how to optimize the HOE-DCN's configuration for network orchestration. Specifically, we design an online scheme based on deep reinforcement learning (DRL), and make sure that it can extract high-level knowledge from the low-level input and come up with optimal HOE-DCN configurations on-the-fly.

Brief report on the talk:

The talk lasted for around 30 minutes, and was followed by a fruitful 10-minute discussion on the topic. There were around 15 attendees, including faculty members, researchers, and graduate students. The talk was well received.

Pictures taken at the talk:



