

**School of Computer Science and Engineering
Presentation**

Kangkang Li

University of Notre Dame

CSE Faculty Candidate

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**Topology-Aware Job Scheduling and Placement in
Cloudlet and
High Performance Computing Systems**

Abstract In the topic of resource management of distributed systems, the interconnection topology of the computing nodes plays an important role in the way that the jobs should be scheduled and allocated. In this talk, I will discuss two resource allocation problems. The first problem is the topology-aware job scheduling and placement problems in high performance computing (HPC) systems, in which a 3D torus-based interconnection topology is used, and the objective is to reduce system fragmentation and improve system utilization. The second problem is the virtual machine (VM) placement problem in cloudlet computing systems. A wireless mesh network topology and the adaptive bandwidth enabled by the Software Defined Networking (SDN) technologies are applied in the considered cloudlet computing systems.