



CHALLENGE #13

SLU-BDW-02

Networking to Handle Big Data Workloads: Architectures for Hybrid Elastic Edge-Cloud Application Management

Meet the expectations of this US Node through the technology challenge described below



GOALS

Application software is becoming increasingly abundant in functionality and increasingly demanding of resources, e.g., memory and compute power. This project examines how application software, e.g., a Virtual Reality (VR) based drone control application, or a self-driving vehicle, can be partitioned and deployed over different parts of a distributed computing infrastructure, i.e., resources are managed by a hybrid of service and cloud providers. This challenge is to advance the state of the art in the area of application software decomposition and deployment over large-scale hybrid cloud infrastructures.

DETAILS

Challenges that the candidate will be asked to tackle include: (1) what is the best partitioning of the application that balances compute and memory demand for each application component (function) and the communication needs between these functions? (2) How should the networked system adapt to changes in the availability of resources to maintain a high level of quality of experience for users? (3) How can decomposing theory be helpful in managing distributed complex cyberinfrastructure?

SKILLS REQUIRED

Candidates should have demonstrated expertise in the outlined topic with prior publications in the field.