JOINT SEMINAR
Big Data Institute & Department of Computer Science and Engineering, HKUST

Data on the Edge: Leveraging the Network Edge for Internet Applications

Prof Divy Agrawal
Professor of Computer Science, University of California at Santa Barbara

Date : 14 May 2018 (Monday)

Time : 2:00pm - 3:00pm

Venue : Chen Kuan Cheng Forum (LT-H), HKUST

ALL ARE WELCOME!

Abstract

We propose Dynamic Paxos (DPaxos), a Paxos-based consensus protocol to manage access to partitioned data across globally-distributed datacenters and edge nodes. DPaxos is intended to implement a State Machine Replication component in data management systems for the edge. DPaxos targets the unique opportunities of utilizing edge computing resources to support emerging applications with stringent mobility and real-time requirements such as Augmented and Virtual Reality and vehicular applications. The main objective of DPaxos is to reduce the latency of serving user requests, recovering from failures, and reacting to mobility. DPaxos achieves these objectives by a few proposed changes to the traditional Paxos protocol. Most notably, DPaxos proposes a dynamic allocation of quorums (i.e., groups of nodes) that are needed for Paxos Leader Election. Leader Election quorums in DPaxos are smaller than traditional Paxos and expand only in the presence of conflicts.

About the speaker

Divy Agrawal is a Professor of Computer Science at the University of California at Santa Barbara. His research interests are in the areas of databases, distributed systems, cloud computing, and big data infrastructures and analysis. He is the Fellow of the ACM, the IEEE, and the AAAS. He serves as the Editor-in-Chief of Journal of Distributed and Parallel Databases and serves on the Editorial boards of ACM Transactions of Spatial Algorithms and Systems and ACM Books. He has published 400+ articles on databases and distributed systems and has supervised 35+ PhD students during his tenure at the University of California at Santa Barbara.

✉ bdi@ust.hk   🌐 bdi.ust.hk