Webinar on Next-Generation IoT

The Fifth Edition

IEEE Communication Society
Technical Committee on Communications Software
Special Interest Group on "NFV and SDN Technologies"

All participants need to pre-register by 5:00 PM February 26, 2023, by filling up the following form: Registration Link

Quick configuration in cloud computing

Prof. Saurabh Bagchi
Purdue University, USA

Abstract: Much of the data generated by organizations in many verticals are stored in and accessed from cloud-hosted databases (DBs). Increasingly, a vast array of verticals use NoSQL DBs — such verticals include social media, smart home and city applications, and autonomous systems (like autonomous driving or industrial IoT). Common NoSQL DBs include Cassandra, MongoDB, DynamoDB, and Redis. These systems have a currently unsolved problem — how to configure them automatically to meet a user's latency or a throughput requirement. Both the DBs and the cloud platforms come with many configuration parameters, with complex dependencies among them, and incorrect setting of any one of the performance-critical configuration parameters can lead to pathologically poor performance. In this talk, I will discuss how large the problem is and the current emerging solutions.

Accelerating Data-Intensive Applications with Network Offloading

Prof. Minlan Yu
Gordon McKay professor
Harvard School of Engineering and Applied Science, USA

Abstract: Data intensive applications need to transfer and process a large amount of data with high performance, but often incur significant network stack and computing overhead. We explore the opportunities of leveraging emerging network devices such as smartNICs and programmable switches to accelerate such data-intensive applications. We identify the best division of labor between network devices and end hosts for accelerating applications while following the resource and programming constraints of network devices. I will present two projects in this talk: IOTCP for accelerating content delivery on smartNICs and Cheetah for accelerating database queries on programmable switches.

Navigating the Virtualization World Towards 6G: Agility and Reliability

Prof. Martin Reisslein
Arizona State University, USA

Abstract: Agility: Frequent user mobility makes it challenging for Mobile Edge Computing (MEC) to guarantee the close proximity to the users. To tackle this agility challenge, we give an overview of the Flexible And low-latency State Transfer (FAST), the first programmable state forwarding framework. FAST flexibly and directly forwards states between source instance and destination instance based on Software-Defined Networking (SDN).

Reliability: Existing Network Function Virtualization (NFV) service placements that reuse existing network functions either reuse an entire Service Function Chain (SFC) or only individual network functions. We give an overview of the novel Subchain-Aware NFV service Placement (SAP) optimization model strives to reuse existing subchains of consecutive network functions.

Dr. Arijit Roy, IIIT Sri City, India
Dr. Ayan Mondal, IIT Indore, India
Prof. Sudip Misra, IIT Kharagpur, India

More details can be found **here**
Date: February 27, 2023
Time: 7:30 PM - 10:30 PM, Indian Time (IST)