

BUET ACM CHAPTER  
*presents*

# Practical Memory Disaggregation

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## Speaker: Mosharaf Chowdhury

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Mosharaf Chowdhury is an Assistant Professor in the EECS Department at the University of Michigan, Ann Arbor. He received his PhD from the AMPLab at UC Berkeley, his master's from the University of Waterloo, and his bachelor's degree from Bangladesh University of Engineering and Technology (BUET). His research falls in the intersection of systems and networking with a common theme of enabling application-infrastructure symbiosis across different layers of software and hardware stacks.

Mosharaf invented coflows and is a co-creator of Apache Spark. Software artifacts from his research have been deployed in Microsoft and Facebook datacenters. He has received an NSF CAREER award (2019), the 2015 ACM SIGCOMM doctoral dissertation award, a Google faculty research award (2016), two Alibaba innovation research awards (2018), an NSDI best paper award (2012), a Facebook Fellowship (2012), and a Cheriton Scholarship (2009), and he had been nominated for an NSDI community award (2012) as well as a University of Waterloo alumni gold medal (2009).

## Abstract

Memory-intensive applications suffer large performance loss when their working sets do not fully fit in memory. Yet, they cannot leverage otherwise unused remote memory when paging out to disks even in the presence of large imbalance in memory utilizations across a cluster. In this talk, I'll describe the design and implementation of our group's progress in making memory disaggregation practical by addressing challenges in harvesting and exposing unused memory to unmodified applications as well as in load balancing, performance Isolation, fault-tolerance, and building higher level primitives on disaggregated memory. I'll also touch upon extending beyond main memory and disaggregation of GPU memory and network switch memory.

**When:** Thursday, 11<sup>th</sup> June, 2020 (8:00 PM)

**Where:** Online. Zoom Meeting ID: 626 7316 7400, Password: 214141

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