



Dissertation Defense

Efficient and Scalable Machine Learning for Distributed Edge Intelligence

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Abstract:

In the era of big data and IoT, devices at the edges are becoming increasingly intelligent, and processing the data closest to the sources is paramount. However, conventional machine learning works with the centralized framework of collecting data from various edge sources and storing it on the high-performance cloud to support computationally intensive iterative algorithms. This dissertation proposes to integrate ideas from fields of machine learning and systems for designing efficient and scalable algorithms for distributed training of machine learning models amenable for edge computing with limited hardware and computing resources. The resulting decentralized machine learning framework aims to keep the data private, reduce latency, save communication bandwidth, be energy-efficient, and handle streaming data.

Biography:

Jyotikrishna Dass is a Ph.D. candidate in the Department of Computer Science and Engineering at Texas A&M University, under the supervision of Dr. Rabi Mahapatra. Previously, he received his B.Tech. in Electronics and Communication Engineering with a Minor degree in Computer Science and Engineering from Indian Institute of Technology, Guwahati in 2014. His research interests include machine learning and systems. He is also passionate about teaching and a career in academia. He has taught various courses as a Graduate Teaching Fellow, and Graduate Assistant Lecturer (2x) and served as Graduate Assistant Teaching (14x) at Texas A&M. He is a recipient of the CSE Teaching Assistantship Excellence Award (2018) and the College of Engineering Graduate Teaching Fellowship (2020).