

EE/DSI Seminar**Columbia University Electrical
Engineering Department****Data Science Institute
Smart Cities Center****Prof. Mi Zhang****Ohio State University****Date:** Tuesday, March. 25**Time:** 10:30am - 11:30am**Location:** NWC 14th FLR
conference room**Seminar:** Empowering the Next
Billion Devices with AI**Host:** Xiaofan (Fred) Jiang*Electrical Engineering & Data Science Institute Seminar Series***Empowering the Next Billion Devices with AI**

The proliferation of edge devices and the gigantic amount of data they generate make it no longer feasible to transmit all the data to the cloud for processing. Such constraints fuel the need to move the intelligence from the cloud to the edge where data resides. In this talk, I will present our works on how we bring the power of AI, in particular, deep learning, to edge devices to realize the vision of Artificial Intelligence of Things (AIoT). This talk consists of two parts. The first part focuses on how we address some of the most fundamental problems that act as the key barriers of achieving the vision of AIoT. First, I will present our work on designing adaptive frameworks that empower AI-embedded edge devices to adapt to the inherently dynamic runtime system resources in real-world deployments. Second, I will talk about our work on developing automated machine learning (AutoML) frameworks that provide an automated and scalable solution to the device deluge challenge in AIoT. In the second part of this talk, I will present how we use AI as the core component to design AIoT systems for a broad range of problem domains. I will focus on one killer application of edge computing, and present an AI-empowered distributed edge system for low-latency, high-throughput, and scalable live video analytics. Finally, I will talk about our work on spatial computing, which pushes the frontier and opens up new opportunities of AIoT research.

About Prof. Mi Zhang

Mi Zhang is an Associate Professor and the Director of AIoT and Machine Learning Systems Lab at The Ohio State University (OSU). He received his Ph.D. in Computer Engineering from University of Southern California (USC) and B.S. from Peking University, and spent one year as a Postdoctoral Associate at Cornell University. The key mission of his lab is to Empower Billions of Everyday Devices with AI to realize the vision of Artificial Intelligence of Things. To achieve this mission, he and his students focus on its core challenges related to sensing, intelligence, connectivity, efficiency as well as its real-world applications. Dr. Zhang's work has been recognized by seven best paper awards and nominations, NSF CRII Award, Facebook/Meta Faculty Research Award, and Amazon Research Award. He is the 4th Place Winner of Google MicroNet Challenge, the Third Place Winner of NSF Hearables Challenge, and the champion of NIH Pill Image Recognition Challenge. He is also the recipient of the inaugural USC ECE SIPI Distinguished Alumni Award in the Junior/Academia category for his contributions to mobile computing, edge AI, and AIoT in his early career.