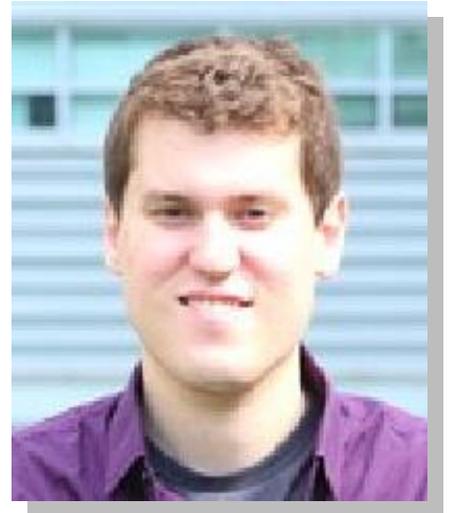# CoCo Seminar Series
Spring 2023

Fully Autonomous Aerial Systems: Design, Implementation, and Applications

Dr. Jayson Boubin
Assistant Professor, Computer Science
Binghamton University

Wednesday February 8, 2023   12:00-1:00pm EST
Hybrid (EB-T1 & Zoom; meeting link available on http://coco.binghamton.edu/)

Autonomous systems use machine learning to solve real-world problems with little human interaction. Self-driving cars, crop-scouting drones, and smart cities are becoming a reality, but how far are we from a world where these systems are pervasive? While autonomous systems have benefitted from recent advancements like the rise of edge computing and the deep learning revolution, they are still difficult to implement. Autonomous systems operate in diverse application domains, have strong real-time constraints, and require considerable testing and benchmarking, making them hard to build. Furthermore, they lack the programming and deployment models that popularized deep learning (Tensorflow) and distributed computing (Hadoop). In this talk, Professor Jayson Boubin will present his research on designing, benchmarking, and building autonomous systems to bring us closer to a world where autonomous systems are pervasive. Jayson will describe how his systems software like SoftwarePilot, testbeds like PROWESS, and theoretical contributions like MARbLE help researchers build swarms of autonomous drones for new domains.

Dr. Jayson Boubin is an Assistant Professor of Computer Science at Binghamton University. He earned his PhD in Computer Science from Ohio State University. His research interests sit at the intersection of computer systems, machine learning, autonomy, and robotics. He builds complex systems which efficiently leverage new or extant machine learning, distributed systems, and robotics technologies to solve real world problems. Specifically, he builds fully autonomous UAV which operate in highly resource constrained environments like crop fields, forests, and remote infrastructure sites. These systems require serious compute resources and software support, but have little power, network bandwidth, or time to spare, necessitating creative engineering solutions and completely new technologies to properly implement..

For more information, contact Hiroki Sayama (sayama@binghamton.edu).   http://coco.binghamton.edu/