I am a graduate student in the Real-time Water Systems Lab at the University of Michigan (Ann Arbor). My work primarily focuses on the development of algorithms for the control of stormwater systems. My graduate work is advised by Prof.Branko Kerkez.

At the Real-time Water Systems Lab, I am one of the core developers of Open-Storm.org, a complete end to end open-source stack for the monitoring, modeling, and control of water systems. I’ve also led the development of benchmarking, a simulation sandbox for training and evaluation of stormwater control algorithms.

I am interested in optimization, control, machine learning, and wireless sensor networks. My research focuses on the application of these tools for addressing the challenges in water systems.

Anomalies in the streaming data can be detected by estimating the shift in the structure of the random forest caused by the addition of a new data point.

Response of the stormwater network can be precisely shaped by just using the data from a wireless sensor network.

By reimagining physical watersheds as a network of interconnected systems, they can be dynamically reconfigured in real-time to target the removal of specific pollutants.

Reinforcement learning can be used for creating autonomous stormwater systems that can dynamically change their behavior based on the state of the watershed for achieving system scale objectives.