NOVEL REMOTE SENSING AND MACHINE LEARNING METHODS TO ASSESS WATER RESOURCES INFRASTRUCTURE

Problem

Maintenance of green stormwater infrastructure and monitoring of water bodies

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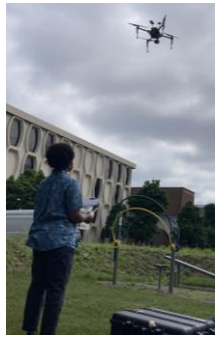
expensive and **time-consuming**

Novel solution

Satellite & Drone data



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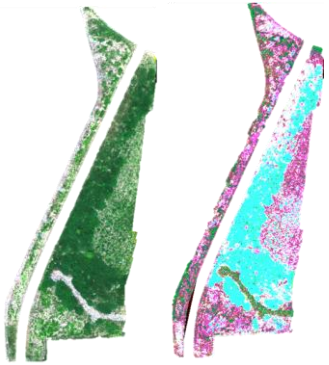
Machine learning models



Outcomes

Fast, **cheap**, and **broad** assessment of:

- Maintenance needs
- Water quality
- Environmental functions

Progress

To-date

- Applied unsupervised machine learning models to define plant coverage

Looking Ahead

- Define weed growth in green stormwater infrastructure
- Assess the impacts of water-borne pollutants on vegetation

Remote sensing data

Joe LaManna measuring a large tree that is part of permanent forest sampling plots across the US.

Joe's lab will be linking this type of continent-wide forest inventory data to remotely sensed data from planes, drones, and satellites to examine spectral signatures of tree health and stress. These data will then be linked to publicly available water-quality data to advance our understanding of the links between forest and water health as well as our ability to assess and predict changes in forest and water health using remotely sensed data.