VIRGINIA TECH

Solving Problems with Data Science at Virginia Tech
# Summer REU 2023

Data Sciences Project:

Plant Health Mintoring for Indoor Farming (Li and Vinatzer Lab)

Project Description:

Indoor, vertical farming is a promising approach to feed the growing population using a limited supply of water, nutrient and energy. Novel automatic approaches are required to streamline the process of plant health monitoring to optimize greenhouse production of tomato, lettuce and other high value crops. Students will work on a greenhouse gantry system to monitor plant growth using stereo vision and hyperspectral imaging devices. Machine learning and 3D modeling of plants will be performed to detect signs of disease occurrence and nutrient deficiency in greenhouse tomato seedlings.
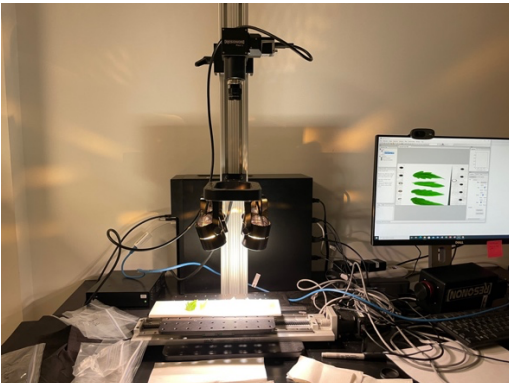
Expected Qualifications of Students:

Students are expected to have a basic understanding of biology and engineering. Experience with robots and coding experience in machine learning using python or other programming languages are preferred.

Faculty Bio:

Dr. Li is an associate professor with experience in machine learning and genomics. Dr. Vinatzer is a full professor with expertise in plant disease and DNA sequencing. Both professors are in the School of Plant and Environmental Sciences at Virginia Tech.

Li Lab Website: https://lilabatvt.github.io/. Vinatzer Lab : https://sites.google.com/vt.edu/lab-vinatzer/home