

Rhizomatic is an AI-powered analysis tool to enable break-through insights of roots to optimize growth of shoots

Overview

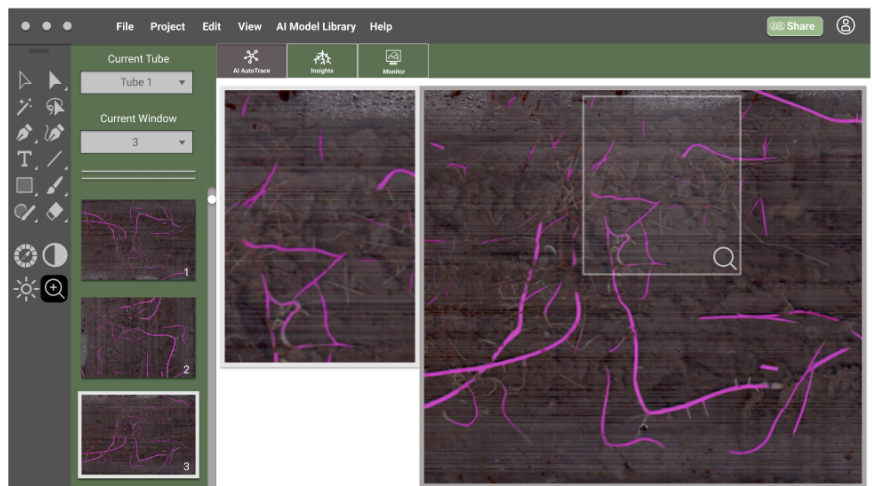
Rhizomatic is an AI system for the automatic detection and characterization of plant root growth. Characterizations include the quantification of total root length, density, diameter, color, mortality, and branching order. This is useful for characterizing plant root growth and monitoring success rates of specific species of plants for targeted resource allocation, phenotyping and breeding.

Problem

It is challenging to monitor in-situ biomass, but understanding the roots is critical to understanding the shoots. Today, researchers use minirhizotrons—clear acrylic tubes installed in the soil into which digital imagers can be inserted—and analyze resultant images manually with unmaintained, open-source software tools. These tools lack technical resilience, automation capabilities, and sufficient root-tracing accuracy, resulting in a detrimental data bottleneck, inhibiting access to scale for the data to be leveraged in a broader subset of the agricultural community.

Technology

Leveraging a proprietary method and apparatus for displaying information, Rhizomatic is able to perform highly accurate fine-root analysis. Oceanit's approach merges classical computer vision with machine learning to create a pipeline that can automatically detect and characterize root systems using non-destructive minirhizotron imagers, which allows for enhanced image processing of the linear imagery collected with the minirhizotron.



AI-Automated Root Detection

Opportunity

Oceanit is looking for technology-forward partners in the vertical farming industry to co-develop a SaaS solution that can help researchers and companies better understand the specific needs of their crop. The market potential in the emerging precision agriculture space is immense—Rhizomatic will help shed light on what we can't see to help us grow to what we can be.