PlantPersona: Uniquely Identifying Plant Instances for Modern Agriculture

This project seeks to enhance modern agriculture by implementing precise plant identification methodologies. Utilizing a diverse dataset encompassing infrared and RGB images of wheat, mustard, and palm pot plants, obtained through advanced imaging technologies, the study aims to uniquely identify individual plant instances within species. Employing a multi-faceted approach involving Convolutional Neural Networks, Support Vector Machines, GhostFaceNet, and Siamese models, the research explores both classification and reidentification techniques. Despite challenges in accurately discerning between plant instances, notably with Siamese Networks, the project underscores the pivotal role of advanced image analysis in optimizing crop management practices and fostering sustainable agricultural development.