

# Exploring high-throughput plant phenomics and genomics data

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**Abstract:** High-throughput phenotyping systems provide abundant data for statistical analysis through plant imaging. Before usable data can be obtained, image processing must take place. Unlike well-established pipelines for processing genomics data, the analysis of phenomics data is a current bottleneck for Omics studies. We propose the use of supervised learning methods to segment plants from background in plant images and compares them to commonly used thresholding methods. As obtaining accurate training data is a major obstacle to using supervised learning methods for segmentation, a novel approach to producing accurate labels is proposed. It is demonstrated that with careful selection of training data through such an approach, supervised learning methods, and neural networks in particular, can outperform thresholding methods at segmentation.