

BLUE RIVER
T E C H N O L O G Y



Introduction to Robotic Weed Control

Salinas Valley Weed School 2012

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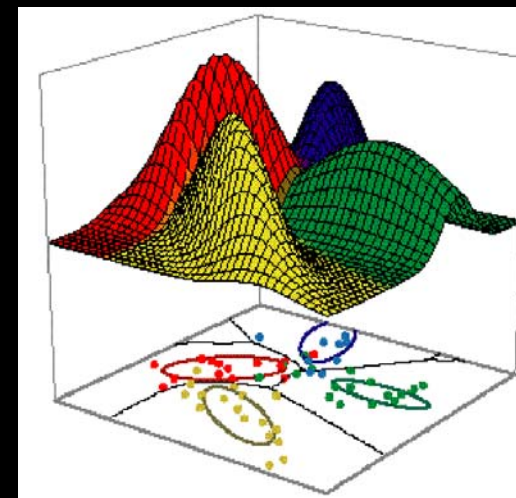
Three steps required for robotic weed control

1. Locate and classify plants in the field in real time
2. Decide what operation to perform on each plant
3. Execute precise operation

Computer Vision



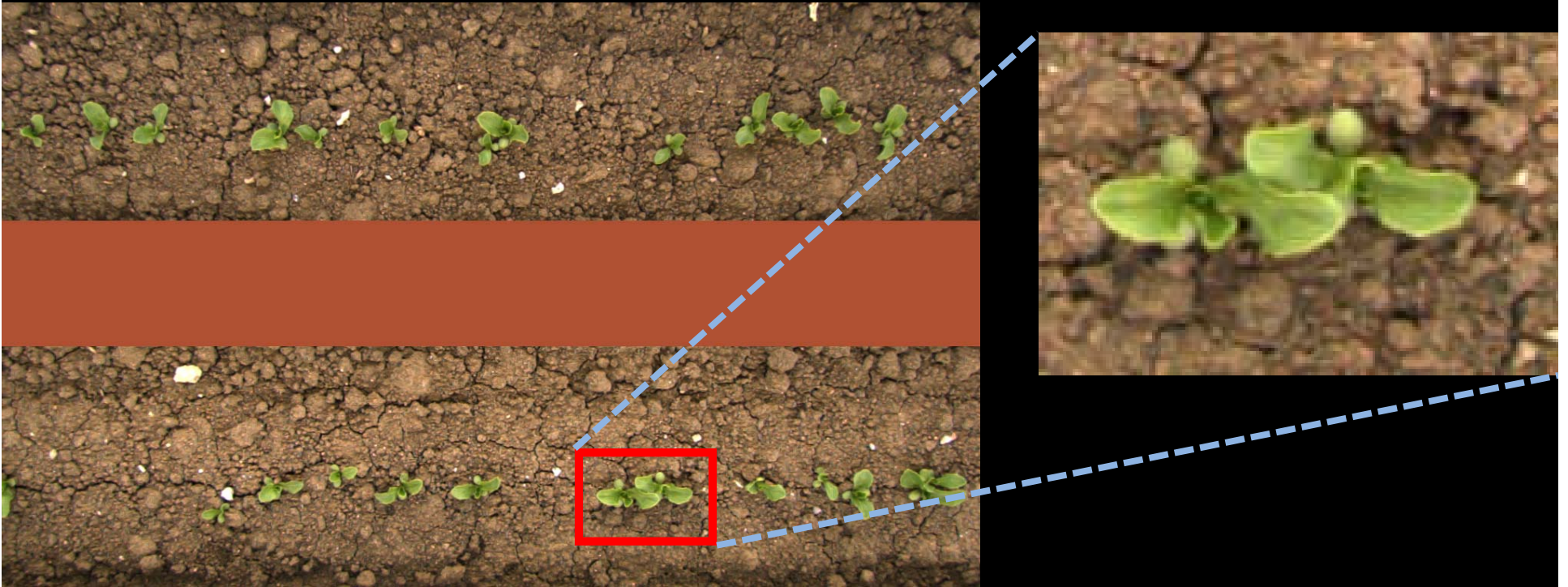
Machine Learning



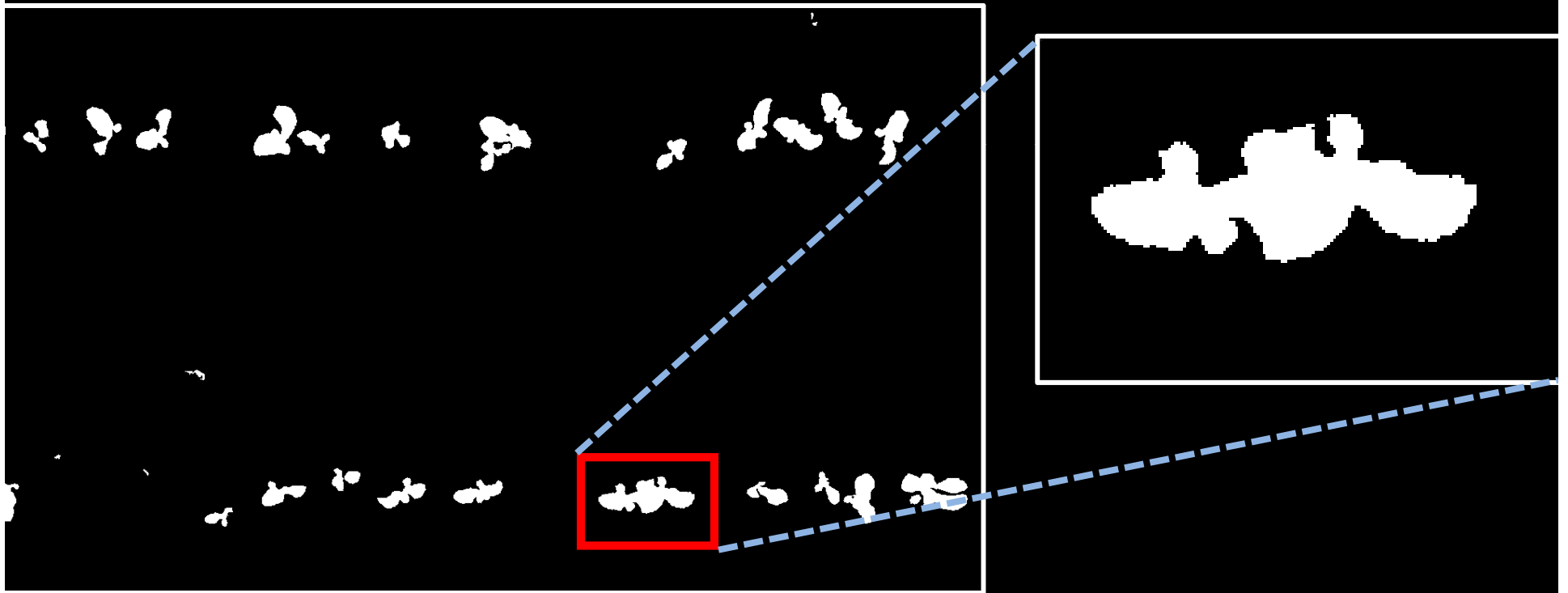
Challenges With Application Of Computer Vision To Agriculture

- Harsh environment for electronics - dust, vibration, moisture
- Stationary camera vs moving camera
- Necessity for high precision at reasonable cost

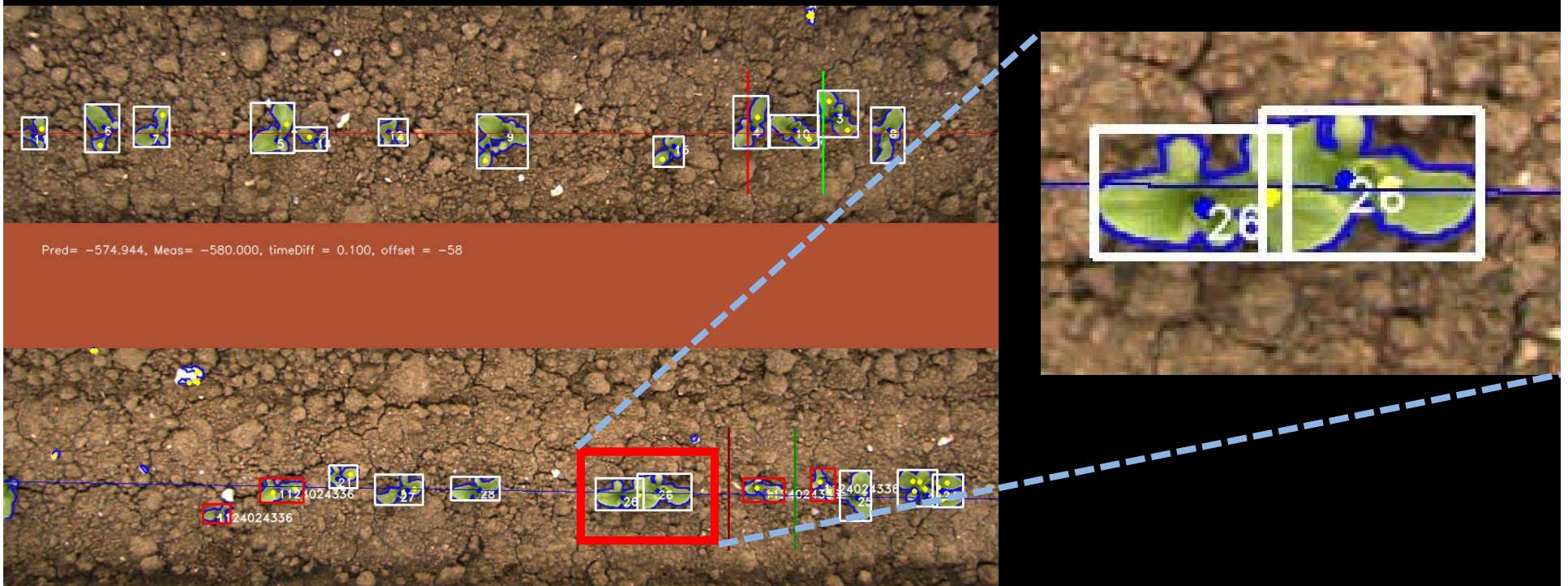
Start with high resolution image



Separate green from not green



Output final processed image



BLUE RIVER

T E C H N O L O G Y

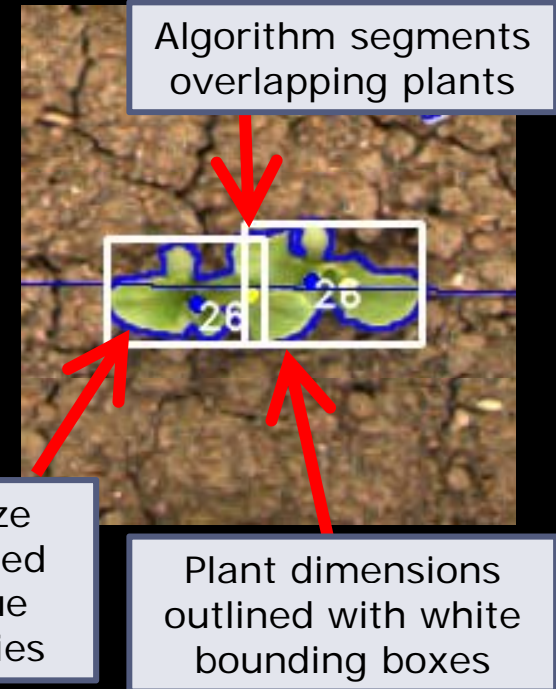
1 Capture data in the field



2 Apply proprietary algorithms in real-time

Computer Vision
+
Machine Learning

3 Automatically identify and locate all plants



BLUE RIVER'S PROGRESS: Working prototype in lettuce thinning

Drive over field



Spray fertilizer



**Precisely
eliminate
unwanted plants**



