Practical Considerations for Implementing AI in Agricultural Equipment

Experiences with AI in Weeding and Thinning

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Purposes of AI in Agricultural Equipment

- Automation of Tasks
- Reduce costs
- Act as labor augmentation (not labor replacement….yet)
- Data collection
- Improve efficiency of inputs
- Reduce quantity of inputs used (example: chemical reduction)
- Maximize yields
- Reduce environmental impact
- Drive sustainability

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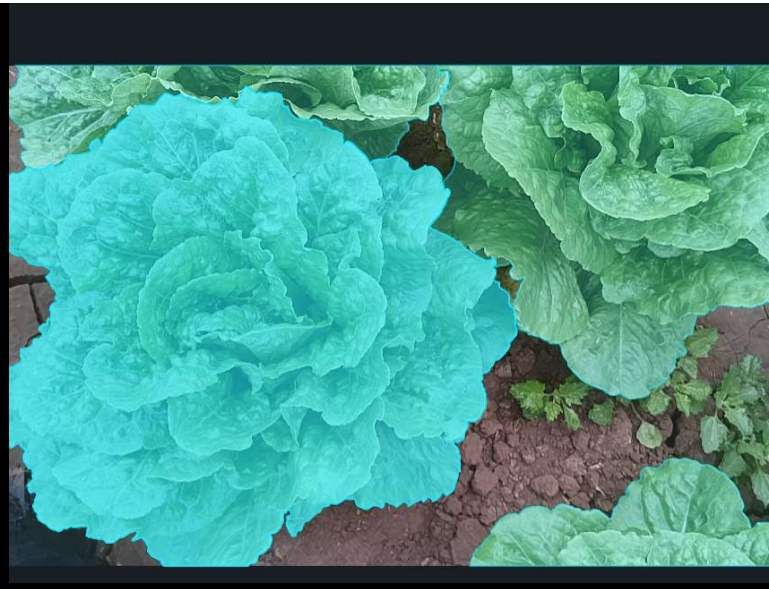
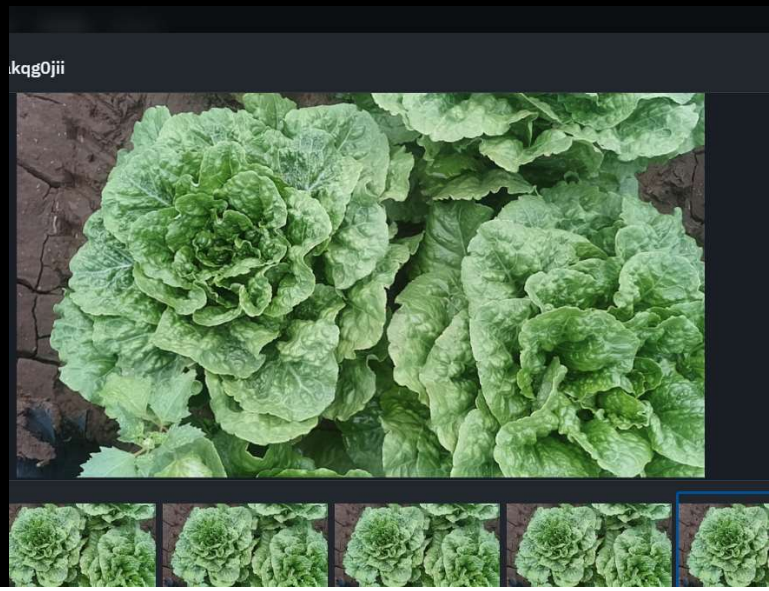
Model Training





Reliability in the Real World

Questions Surrounding Reliability:

1. Performance compared to the human counterpart?
2. Cost compared to the human counterpart?
3. On-going/annual maintenance time and cost?
4. What is the up time?
5. Does it pencil?

- New advancements have improved tech reliability
- Collaborating with industry partners improves reliability

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The Challenges

- Models not fully prepared for real world application
- Not obtaining correct or enough market knowledge (Wrong Rabbit hole!)
- Lack of trained images to perform in all contexts (Danger Will Robinson, Danger!)
- Unable to withstand dynamic environment (ex. Desert climate)
- Financially unable to continue with equipment/AI progress
- Lack of overall equipment durability
- Lack of engineering bandwidth
- Unwilling, or unable to meet market needs

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