Agricultural Robots
Seasons

• Stages of agriculture seasons
  - Prep
  - Sowing/planting
  - Crops maturing
  - Harvest

• What about sub-stages?

• What about livestock-based ag. vs. plant-based ag.?
In general

- Robots are good for 3D tasks
  - Dull
  - Dirty
  - Dangerous

- What in agriculture fits those criteria?
- Lots of things
Considerations

• Only one agriculture robot has been commercialized. Why?

• Specialization?
  – Works for multiple crops?
  – Works for multiple seasons?

• Monolith vs. “ants”

Demeter
CMU

AgAnt
Ullinois
Harvesting

- Demeter
  - Not autonomous but working towards it
  - Allows “lesser skilled” operators to achieve above average performance.
  - Follows its own “cut line”
Milking

- Only commercialized ag robot. Why?
- How it works:
  - Identifies the cow (by an electronic tag),
  - Determines if the cow is to be milked.
  - The milking robot completes milking process.
  - Information/data saved to computer system.
Advantages

- Human-less process
  - Reduces stress on cows
  - Fewer errors (ex. poor sterilization)
- 24/7 milk processing
- Data collection
- Others?
Sheep Shearing

• Why?
• “Shear Magic” - University of Western Australia
  – Computer models surface of sheep
  – Needs to maintain minute distance between shears and skin
    • Wool conducts electricity!
    • Wool varies between sheep and breeds