



ROBOTICS MEET HORTICULTURE

#LIFEWITHPLANTS

Introduction



Robotics

Examples of robotics in
horticulture and plant science
related fields

Career opportunities

Learning Objectives

Students will:

be able to describe different ways robots are used in horticulture and plant science related fields

Be able to identify and describe different robot types

be able to describe advantages and disadvantages of robotics in horticulture and plant science related fields



Robotics

What is robotics...?

It's an interdisciplinary field integrating computers, computer science, technology, along with engineering to produce machines... or robots.

Overarching goal of robotics: assist, replicate, or substitute for humans with various tasks.



Robotics

Can you name different types of robots?
There are 5 types.

1. Pre-Programmed
2. Humanoid Robots
3. Autonomous Robots
4. Teleoperated Robots
5. Augmenting Robots



Robotics

Horticulture Applications

Robotic planting arm



Robotics

Horticulture Applications

Robotic cutting and planting robot



Robotics

Horticulture Applications

Pesticide, herbicide, fertilization applications



Robotics

Horticulture Applications

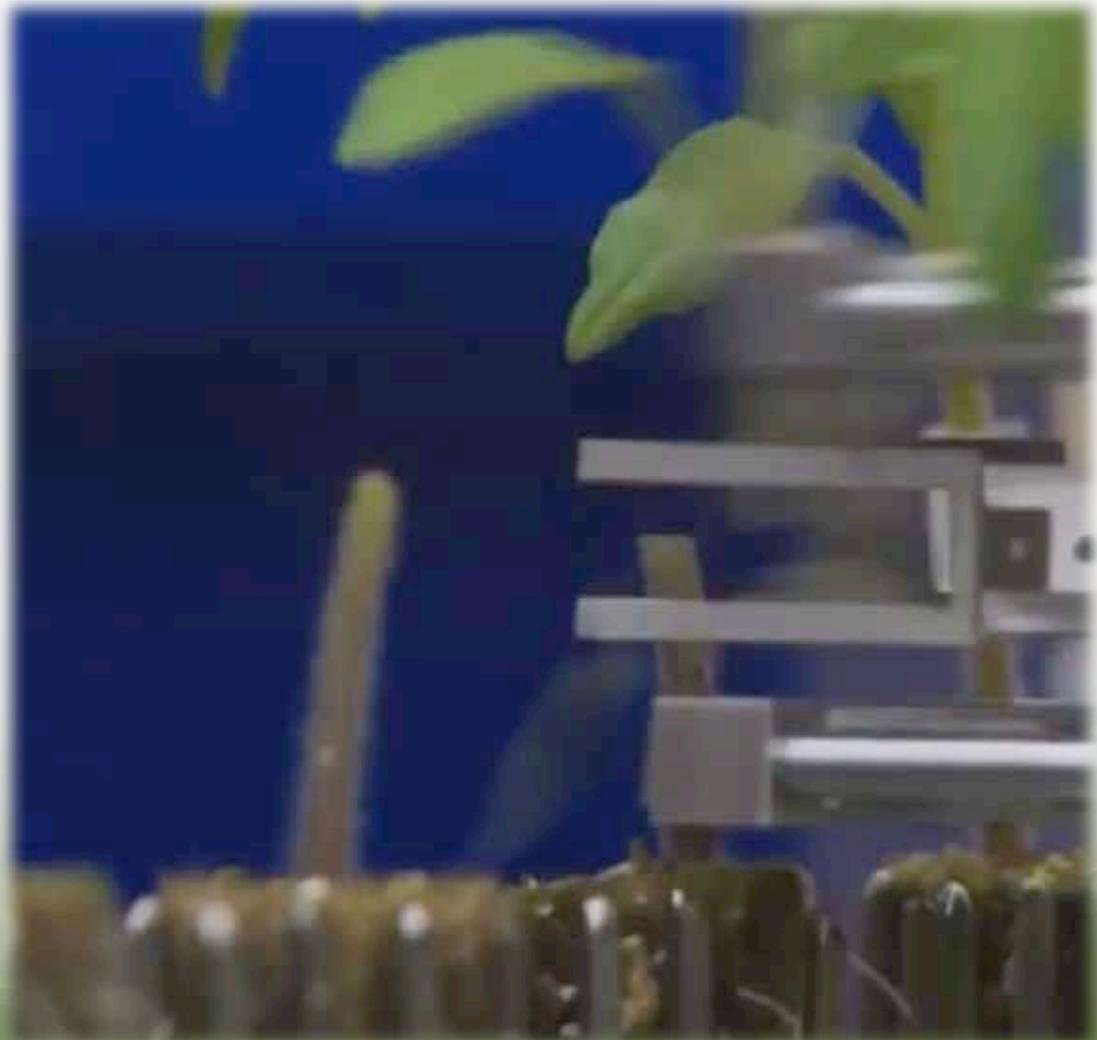
Robotic Fruit and Produce
Harvester and Packager



Robotics

Horticulture Applications

Plant Grafting



Robotics

Horticulture Applications

Plant and product spacing robot



Robotics

Horticulture Applications

Robotic lawn mowers



Robotics

PROS

CONS



Robotics

Pros

- Labor savings!
 - Plant hundreds more per hour compared to hand labor
 - Pick products 24/7
 - Can be operated by one (or few people)
- Can perform risky tasks with less concern
 - pesticides for example

Cons

- COST (initial investment)
- Applicability/Feasibility (e.g. non-flat lawn for lawn mower robot)
- Challenges if breaks down
 - Fixing timeline
 - Costs
 - Could be hard to get manual labor to fill in



Robotics and Careers

Career Examples

Landscape Crew Leader



Plant Production Specialist



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