Minor A-Systems
High tech agricultural solutions

Fontys — green techlab

DENK GROTER

1

Minor A-Systems:
High tech agricultural solutions

Goal

Learn to *cooperate* with other disciplines & multi-disciplinary teams in order to:

- come up with *innovative* solutions for the Agri sector and beyond
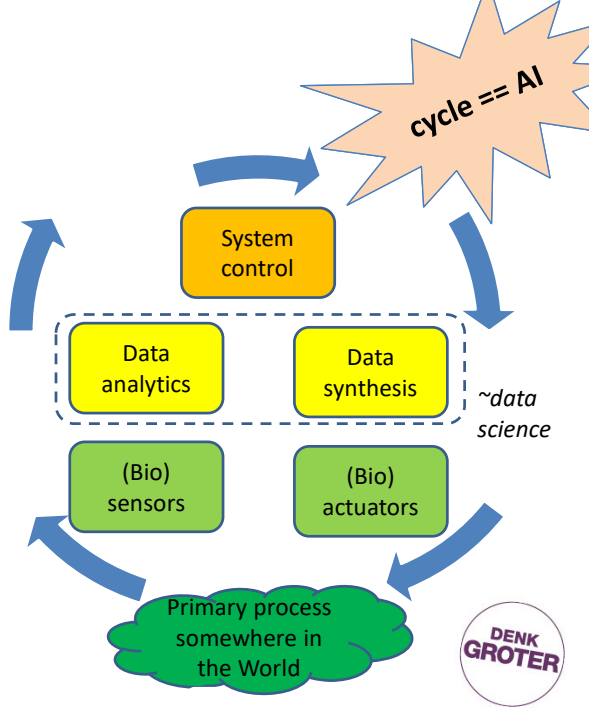- In a self steered way

Planning

- Start: twice a year. Next start September 2021
- Implemented in 5th & 6th & 7th semester

Examples former projects

- Field Robot Event
- Talking Tomatoes
- Veal fever detection
- Treefrog counting
- Animal language recognition
- Fine particulate matter
- High precision weed electrocution

Own suggestions?

Fontys

cycle == AI

System control

Data analytics | Data synthesis

~data science

(Bio) sensors | (Bio) actuators

Primary process somewhere in the World

DENK GROTER

2

Minor A-Systems
Electable courses

System Engineering

IoT

Bio Sensors

Ethics

Data Analytics

Python/Micropython

Robotics

Courses are on demand

Machine vision

Digital Twinning
- plants
- animals

Solidworks

Biomimicry

Embodied AI

DENK GROTER

Fontys

3

Virtual Plant modelling for Deep Learned robotics

Problem1
1. Bell pepper needs to be recognised by robot's eyes
2. Large data sets are needed; consumes a lot of time
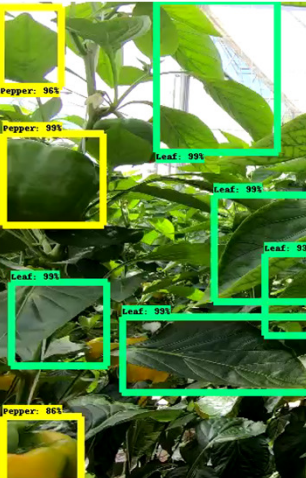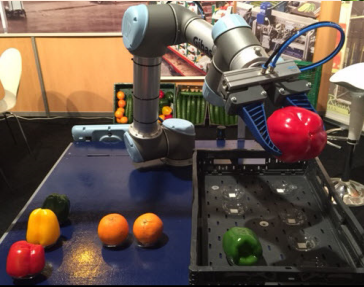
Solution1
1. 3D virtual plant modelling to generate all data sets
2. Robot sight trained (not programmed) with deep learning

Problem2
Bell pepper needs to get picked without any damage

Solution2
Robot with artificial skin that can balance pressure with gravity

Fontys

4

Want some more information?

https://fontys.nl/Studeren/Minoren/A-systems-High-Tech-Agricultural-Solutions.htm

Fontys

5