

AI project DATA3750

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Abstract

In this project I aim to make a 4 degree of freedom (4DOF) robotic arm with object recognition. It is a basic robotic arm connected to a system-on-a-chip (SOC) with a camera. If there is time I will try to install it on a belt driven rover and make an app so I can control it manually from my phone.

1 Background

I am a curious electronic engineer student that want to expand my knowledge in Artificial intelligence (AI). The best way to learn something for me is to make it, and since we do not have any projects this semester I decided to build my own robotic arm with object detection. I have following equipment:

1. 4DOF robotic arm kit
2. SOC - Tinker board s and/or Raspberry pi 4B
3. 2 different types of camera
4. RC tanks- WWII German tiger

If this project becomes a part of my study-plan, not only on my spare time, I believe it will be finished before summer and hopefully I have installed it on a RC tanks.

2 Specific goals or aims

1. Make object detection on my laptop using python
2. Make object detection on SOC
3. Install the robotic arm on SOC
4. Get object detection to control the robotic arm

5. Make an app
6. Install on a rover
7. Make the object detection control the rover and the robotic arm.

3 Specific deliverables

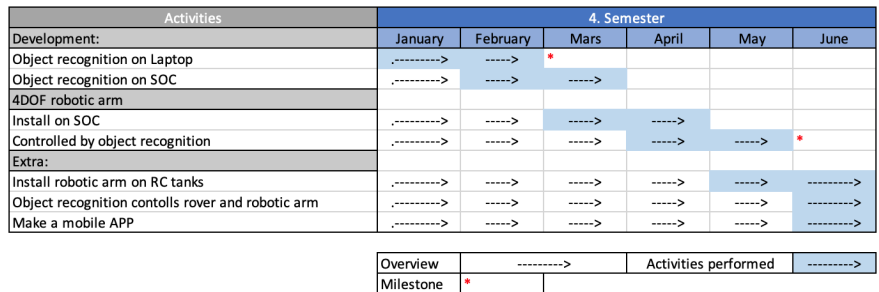


Figure 1: Gantt-diagram of spesefic deliverables