EE/CprE/SE 491 - sddec23-10

Developing a Deep Learning Model to Automatically Detect Microscale Objects in Images and Videos

Week 8 Report

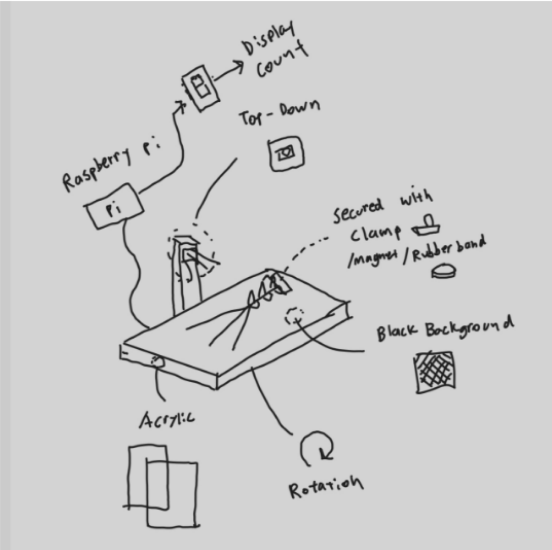
04/03/2023 – 04/09/2023
Client: Professor. Santosh Pandey
Group number: 10

Team Members:

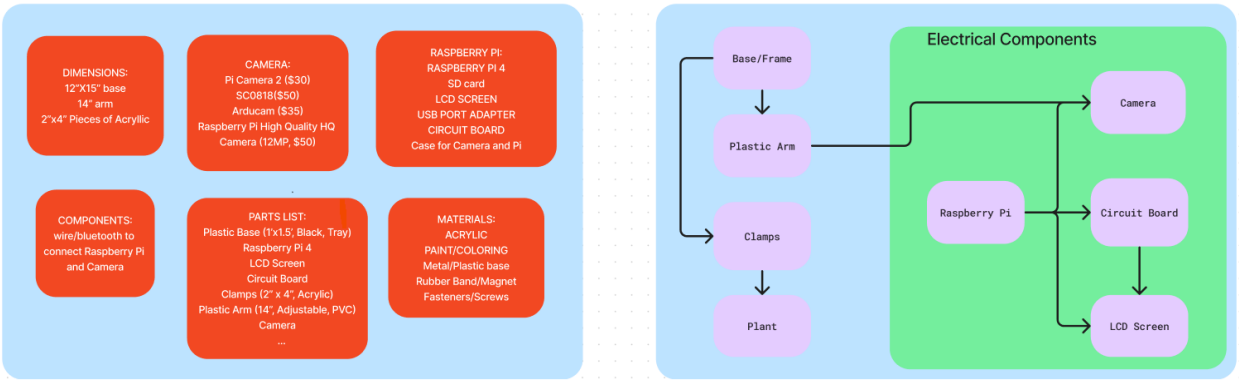
Katherine Moretina
Ethan Baranowski
Chris Cannon
Matthew Kim

Meetings- Hardware System Diagrams

Hardware design drawing



System Level Diagram



Detectron2 Implementation- All

- Each person tried to use Detectron2 Implementation on their computer
    - https://colab.research.google.com/drive/13mO8wH8r2KuKdRQmHc0fpOGGatOhc9r7?authuser=1#scrollTo=8IRGo8d0qkgR

Labeling- All

- Continue labeling for the dataset.

Individual Contributions

Member	Tasks Completed	Hours This Week	Total Hours
Katherine Moretina	Attended all required meetings. Labeled all 10 images. Ran the Detectron2 demo on my computer.	4	36
Matthew Kim	Attended regular meetings. Try to brainstorm	3	28

	and generate ideas for the hardware design. Also worked on the presentation		
Chris Cannon	Labeled images, investigated running Detectron2 locally.	4	24
Ethan	Continued task development and deployment for iterative progress on algorithm development. Helped draft Testing documentation and presentation. Attempted running detectron2 algorithm implementation continued labeling images in dataset. Drafted first iteration of Hardware Systems-Level Design	4	43

Plans for Coming Week

- Evaluate team member experiences with the Detectron2 algorithm and set plan for how to continue developing the algorithm.
- Continue labeling data with Labelme software for training set. (149 images total).
    - Develop standards of labelling - file naming, polygon shapes, general guidelines
- Investigate SIFT machine learning algorithm for possible simplified object detector that will help simplify algorithm training and implementation.
- Revisit Hardware Systems Designs for iterative improvements.
- Start Software Systems Design.