

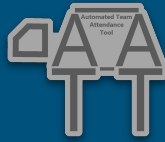


sddec20-19

# Automated Team Attendance Tool

PRIM II Overview Fall 2020

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# Our Team

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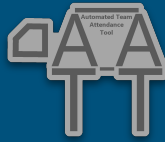


# Overview

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Our project is to automate the attendance procedure of Team-Based Learning classrooms to eliminate the time taking attendance during class.

Our solution uses a Raspberry Pi, a Raspberry Pi Camera, and an artificially intelligent computer vision library (Yolov3).



# Progress

- Set up Raspberry Pi Hardware. Run testing of our object detection algorithm and confirm that it works.
- DataBase and API updates.

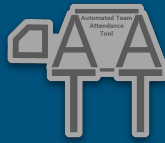
Tasks	S2 Week 4	S2 Week 5	S2 Week 6	S2 Week 7	S2 Week 8	S2 Week 9	S2 Week 10	S2 Week 11	S2 Week 12	S2 Week 13	S2 Week 14
	9/7/2020	9/14/2020	9/21/2020	9/28/2020	10/5/2020	10/12/2020	10/19/2020	10/26/2020	11/2/2020	11/9/2020	11/16/2020
Set up raspi & camera	█	█	█								
Communicate with camera/take a picture using pi	█	█	█	█							
Parse and put in data structure from YOLO					█						
Compare seating chart and YOLO data											
Scheduler											
Simple GUI for inputting seating chart/professor data											
API and Database	█	█	█	█	█						
Email attendance to professor											
Integration											
Testing											



# What's next

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- Finish Yolo integration on the Raspberry Pi
- Finish api/database setup
- Have a trial with training and stubbed data by 10/19/2020
- Cross reference data from Yolo with seating chart
- Use Api to schedule image capture on the pi
- Create the emailer



# Potential Contact Tracing Use Case

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- Along with TBL classroom attendance AT-AT also has potential application in contact tracing during the pandemic
- A minimal viable implementation could be created with few changes to the system
- Rather than identifying which teams are accounted for, the system could identify where individual students are located which can be used for potential contact tracing application
- Accuracy of YOLO with masks could limit application

# Questions?

