Initial Team Description

Team Number 14

Team Members: Ross Copeland, Aaron Aylor, Christopher Ariagno, Jack Lunceford, Noah Mohabbat

Project Name: TrackMe.Live

Project Synopsis: A web application to either manually control or use an ML model to track an individual while speaking with an external camera.

Project Description: This project is being undertaken in order to make the process of filming speakers in rooms such as classrooms and churches completely remote. Right now, a problem with filming a speaker in a room is that when the speaker goes out of frame, someone has to physically change the camera angle to continue filming the speaker. To address this problem, we will create a web application called TrackMe.Live that will enable the user to control the camera angle from a computer to keep the speaker in frame, as opposed to having to physically change the camera angle. That way, the camera angle can be changed remotely. As a stretch goal for this project, we would like to automate the process of filming a speaker by controlling the camera via a machine learning model. With a machine learning model in place, if the speaker goes out of frame, there would be no need for a human to control the camera angle to continue filming the speaker. Instead, the camera would automatically change its angle to continue tracking the speaker. Thus, the filming of a speaker would be fully automated. The end result of the project would be a web application that controls the camera angle remotely, as well as possibly a machine learning model built into the web application that would fully automate the process of filming a speaker.

Project Milestones:

First Semester:

UI with Video Streaming (Oct. 14, 2021)

VISCA commands to server (Nov. 14, 2021)

UI for video and VISCA control (Nov. 30 2021)

Python and Flask backend (Nov. 30, 2021)

Second Semester:

Full-scale command line program (Feb. 26, 2022)

Deep Learning model (Mar. 1, 2022)

Integration of UI & Tracking Systems (Apr. 13, 2022)

System Testing & Documentation (Apr. 20, 2022)

Team 14 Gantt Chart

PROJECT TITLE	TrackMe.Live	Team Number:	Team 14
Team Members	Chistopher A., Ross C., Jack L., Noah M., Aaron A.	DATE	9/27/21

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION
1	First Semester 9/27/2021 - 11/14/2021				
1.1	Basic UI	Chris	9/27/21	9/30/21	3
1.2	UI With Video Streaming	Aaron, Ross	9/30/21	10/14/21	14
1.3	HTTP Commands Control Camera	Chris	9/27/21	10/21/21	24
1.4	Socket Connection Support	Jack, Noah	9/27/21	10/31/21	34
1.5	VISCA Commands to Server	Chris, Ross	10/21/21	11/14/21	23
1.6	USB Connection Endpoints	Noah, Aaron, Jack	10/31/21	11/14/21	14
1.7	Complete UI For Video & VISCA	Aaron, Ross	11/14/21	11/30/21	16
1.8	Complete Backend with Python & Flask	Noah, Chris, Jack	11/14/21	11/30/21	16

WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION
2	Second Semester 1/17/2022 - 4/20/2022				
2.1	Full-Scale command line Program	Aaron, Ross	1/17/22	2/26/22	39
2.2	Build Deep Learning Model	Chris, Noah, Jack	1/17/22	3/1/22	44
2.3	Integrate UI & Tracking Systems	Aaron, Ross	2/26/22	4/13/22	47
2.4	System Testing & Documentation	Chris, Noah, Jack	3/1/22	4/20/22	49

Project Budget:

For the TrackMe.Live capstone, we shouldn't need too much funding from the EECS department since we are also collaborating with the SELF Fellowship to get certain items to use. Below shows a chart of what we would need from the EECS Department that would be essential to the project.

Item	Cost	Vendor	
Sony VISCA Camera	$195	eBay	
Camera Wires	$30	Amazon	
HDMI Capture Card	$30	Amazon	
		Total:	$255

The supplies for the project should be ordered and received sometime around November time. Ordering before the semester ends should allow us ample time to test our software on physical hardware. No additional training or supplies should be needed outside of this list.