# Automatic Note Taker for the Impaired

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Submitted to:

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## Project Narrative Description

Our project is small robotic system that will follow a professor or presenter using image recognition. The system will have a speech to text software that will make notes for the user via USB connection on a portable Windows device. Using a high fidelity directed audio microphone to record audio and a high-resolution pan/tilt camera to record video with post-processed subtitles for redundancy purposes. Therefore, the user will not only have the notes from the presentation or class but also audio and video with subtitles for a more detailed account of the event.

### Motivation

We saw a need for this low cost portable solution to help the students with disabilities. The current paid student note taker system is inherently flawed, because the disabled student is reliant on the note taking skills of another student, whom might make mistakes or not take as detailed notes as possible to help the disabled student better understand the lecture. Some student note taker may ignore or miss something the professor or lecturer stated because they may think it not important or common knowledge. The simple basic fact is when someone is fully relying on notes from someone else's perception or understanding of a subject matter the account of that presentation will always be skewed. This system would fix that flaw by having a detailed comprehensive account of the lecture or event that is thorough and unbiased. Every semester most of us receive emails offering to pay students $150 per class to be note takers for the impaired. This system would save the school a lot of money and instead offer this low cost portable all in one solution to multiple students at time instead of each disabled student waiting on a note taker from his or her class to email the notes.

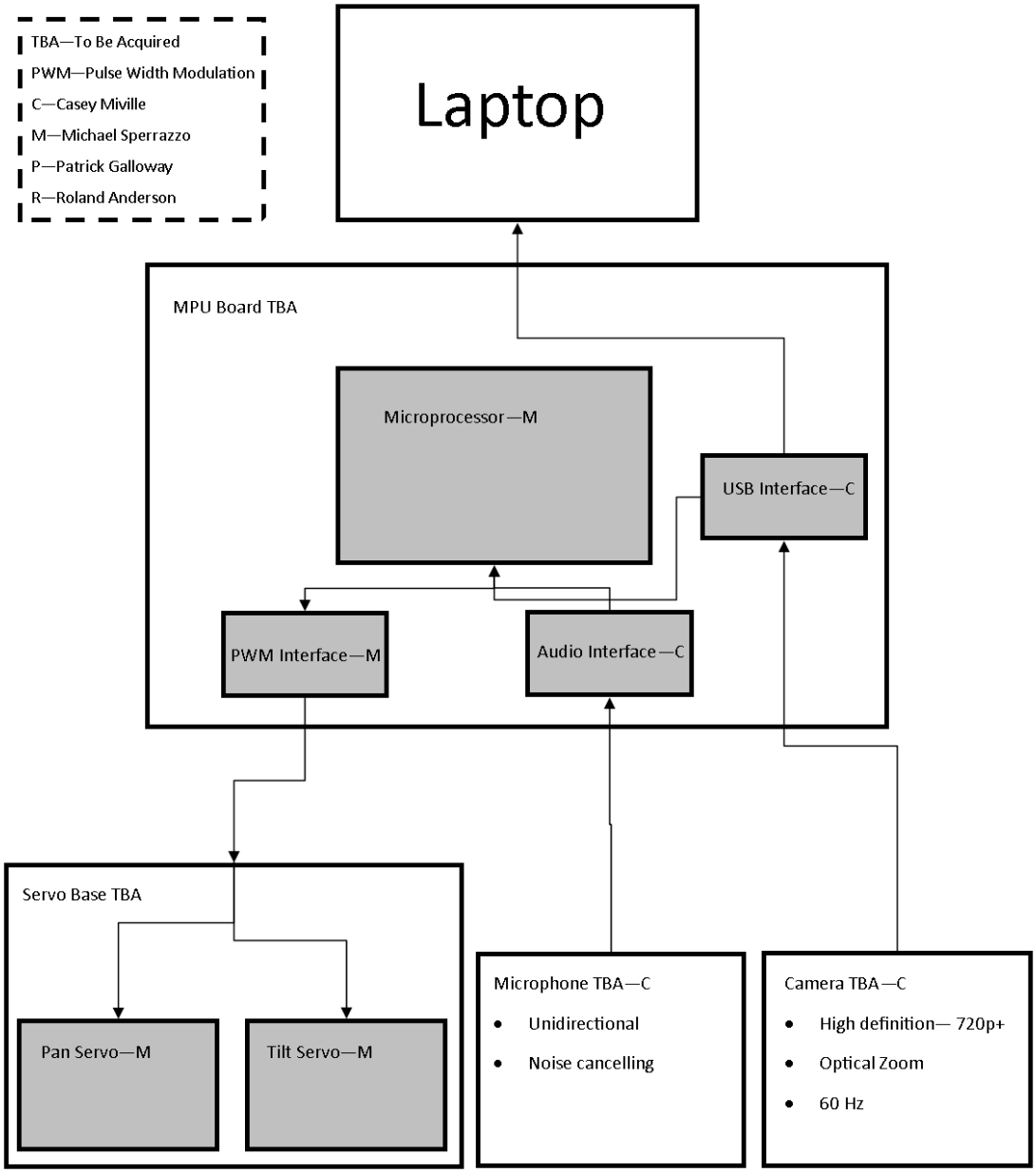
## Goal

The goal of this system is to eliminate the need for student note takers and offer a better thorough all in one solution to the students with disabilities.

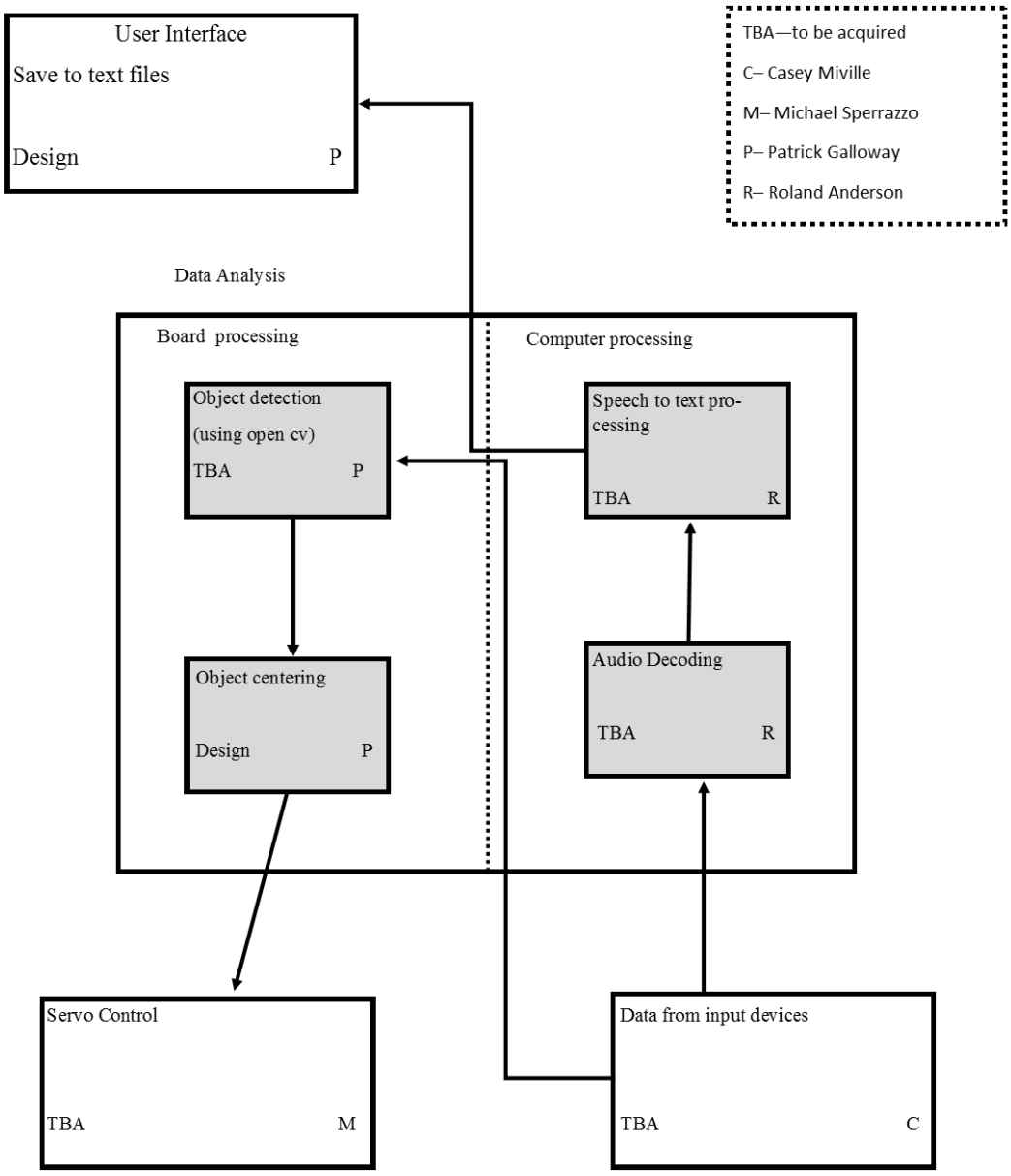
## Specifications and Requirements

The device will be required to function in a class sized environment with various external inputs. The device will track the presenter and be able to pan 180 degrees and tilt within a 90 degree range to cover the presenter's movement. The device will be approximately 8-12 inches high and have a footprint smaller than 9 inches in diameter. The size is to account for an average sized desk in a classroom that the device will have to be resting on alongside a laptop computer. The device should be able to track movement from over 10 feet and be able to direct the microphone to the target for greater audio pickup. Software will include a GUI with easy to use options for disabled students and will be installed on a portable Windows device with a USB interface. Device will be powered through USB connection with the host computer.

## Block Diagram - Hardware



## Block Diagram - Software



## Project Budget and Financing

The project budget is still to be determined and solely depends on part selection with estimate ranging from $500-$1000. Team will be seeking financing through the UCF Students Disabilities Services office.

## Project Milestones

- Select microcontroller
- Select pan and tilt base with servo motors
- Select camera and directional microphone
- Select open source softwares for image tracking, speech-to-text, and video captions
- Develop GUI for Windows based systems
- Integrate components
- Test extensively listening to presenters with various accents