ECE Capstone program
Spring 2020
Project Abstract & Info

Please provide the following information to be shared with on capstone information exchange platform:

1. **Project number**: S20-63

2. **Project title (as will appear on the poster)**: H.A.N.D. (Hand Augmented Narration Device)

3. **Team members**: Hari Shetty, Louis Moccia, Darius Baboomian, Sean Kearns

4. **Adviser(s) name(s)**: Predrag Spasojevic

5. **Up to 5 keywords that will help to classify the project scope**: Educational, enhancing, gesture-based, Raspberry Pi, IMUs

6. **Project abstract (up to 250 words) to be shared with judges**: The reality of the presentations today is that the technology we use to present in front of large crowds is counterintuitive at attracting the attention of our audience. The usage of office presentation clickers or keyboards to help navigate through presentation slides disrupts the flow of presentations and has been proven to distract the audience from a presenter’s main points. Our project addresses this problem by giving the presenter an avenue for a more fluid performance, giving them an attention-grabbing appearance during their presentations. Our solution will explore the usage of various sensors, such as Inertial Measurements Units (IMUs) and Force Sensitive Resistors (FSRs), on a Raspberry Pi to track a user’s hand gestures and translate them to keyboard inputs. In our initial model, IMUs will be our primary method of extracting hand gesture data while FSRs allow for more combinations of hand gestures to key bindings. In doing so, we allow the presenter a variety of options to make their presentations more fluid. Furthermore, this type of device provides a variety of applications that can extend beyond the traditional presentation, such as allowing the presenter to switch to different applications, more fluidly switch to different presentations, or interact with their students using hand gestures. Finally, we intend to do this with cost in mind, since our primary competition can be a relatively cheap product. Our goal is to make a product will help revolutionize the way people interact with their audience and their technology.