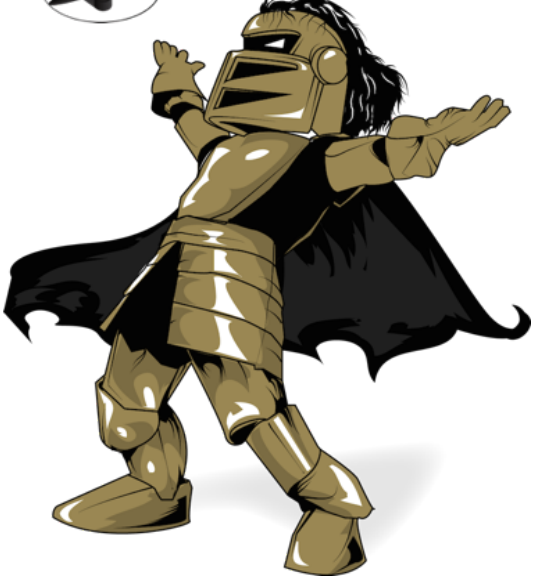

Project Description

Our project was to build a drone that was completely operated with hand gestures. This means that we had to combine all of our Computer Engineering coursework to integrate all of the following things:

- Convolutional Neural Network
- Custom Flight Controller
- Wireless Communication
- User-friendly GUI

Motivation

Our motivation behind this project was mainly to improve the ease of use for flying drones. We understand that the RC remotes that come with drones can be very unwie and this offers a much simpler and more familiar way to control it. In addition, it all for free range of motion for your hands while operating it, as you only need one han send the drone commands, and it will hover when it is not receiving any commands.

Frame undergoes background subtraction and binary th

Drone receives command over Bluetooth

Onboard chip runs flight controller code to run the r appropriate speeds to achieve that maneuver

Conclusion

While we were unable to fly the drone in the end, we were able to meet al requirements of our base product. This means that we were able to succes neural network that would recognize our 8 hand gestures, successfully friendly GUI to send those signals, communicate the command wirelessly o a range of 30ft, and build in a customized flight controller that would stabi nd move it based on the signal received.

The Team

Pranay Jay Patel (CpE) plans on working for a large tech compar years before going back to get his Master's degree in Business Administration, with the intention to start his own company in t

Bernardus Swets (CpE) is following the digital track and took on researching the flight controls. He focused on looking into the dif esigns and corresponding hardware. He also looked into the flight contro laving experience with linear control system, he researched what it woula alance our drone using PID loops.