This semester of Spring 2019, I worked on MiniRHex and a remote communication option. The goal was to create an app that is able to connect to the Robotis 410 Bluetooth module on MiniRHex and dictate movement commands. The first couple of weeks were dedicated to building a new MiniRHex from scratch to work with. After that, I had accumulated quite a bit of feedback for the open-source repository and updated the ReadMe with all of my changes. The majority of the semester was wrestling with the type of Bluetooth, which I found out to be low-energy several weeks in, and to not only successfully connect but to also be able to send data back and forth. I eventually stumbled on an app called BlueFruit by the company, AdaFruit. After playing around with this a bit, I found a portion of the code that only dealt with the connection and communication. I then stripped a lot of the excess of the app to just the communication and connection portion, since that was what I was struggling with for most for the semester. I decided to hard-code my specific MiniRHex, HanRHex, to make the process easier and more consistent, but I hope to expand this. I then redesigned everything else. While I had hoped to be able to work more with computer vision, I wasn’t quite able to get as far as I would have wanted with the April tags, which had some Android Studio debugging issues. I hope to be able to resolve these this summer and add it to the app.

The final state is MobiMini, an app that is able to successfully connect to MiniRHex and also has a control pad where there are four arrow buttons that show which direction the user wants MiniRHex to move. It uses a while-held feedback system. There are other buttons that can be assigned to the other gaits of MiniRhex, if desired.

Currently I have the bulk of the app code on my personal Github, <https://github.com/hannahhe/MobiMini> but I will migrate it over to the RoboMechanics Github, alongside the MiniRHex repository. There are some videos of using MobiMini to remotely control MiniRHex on Slack, but I will make a folder on Box to store everything.