

Music Glove Documentation: Part 2 - Software

I had originally anticipated that the software aspect of the glove would be plug-play-and-program: rather straightforward, and nowhere as time-consuming as making the physical glove. I was dead wrong.

My problems started almost right away, with Bluetooth connectivity. I built the glove expecting everything to work out flawlessly, and had hence gone for Bluetooth to make things wireless. Unfortunately from square one, the Bluetooth transmitter on the glove refused to make a steady connection with the computer. It took about a week of poking at the problem to finally fix it, and I ended up dropping Bluetooth anyway. In order to make a steady connection between my computer and the glove, I had to start the bluetooth connection, and then quickly try to upload something through the Arduino software, effectively forcing the pipeline open long enough for whatever handshake was necessary to happen. However, getting this to work was temperamental at best, so I opted for USB instead.

I had two options for USB connectivity: a breakout board, which would allow the glove to be connected via a normal mini-USB cable; or a FTDI-USB cable. I initially ordered the breakout board as this was a more elegant, solder-and-forget solution. However, I ran into another problem when I was trying to upload code to the ArduIMU. The computer could see the glove, and it appeared that there was a connection being made, but whatever I did, the code would not upload to the glove. The Arduino program would act as if it were about to upload, then just hang indefinitely. After a couple days of attempting to troubleshoot this problem, I ended up buying the FTDI-USB cable.

Working with the specialized cable, I initially had the same problem. However this time when I manually reset the board when the program was hanging, it continued with the upload instead of disconnecting!

Once the code from "<https://github.com/SebMadgwick/ArduIMU-Gloves>" was on the board, I moved forward to work on configuring the glove to control sound. A program called "Glover" was created for this purpose. And here I ran into my next roadblock. Whenever I try to initialize my glove with Glover, the program freezes, requiring a force quit. What I'm assuming this means is that Glover isn't configured to function with only one glove connected. I couldn't figure out a way to edit the coding for the software, so it is at this point that I am drawing my work for this class to a close.

I will be building another glove over the summer, so hopefully Glover will work fine when both are connected. As for my work for “Arduino for Everyone,” I have learned a great deal, about wiring and electronic connectivity from building the glove, and about C code from trying to understand the Arduino code built to run the different parts of the glove.

Successful upload via FTDI-USB cable!

