ECE496 Weekly Status Report
Team GA-5
2016-01-31

Meeting Leader: Duke Durot

Previous Goals and Progress Toward Those Goals

- Remove hexaphonic pickup from PowerGig guitar by 1/26/16 [Ryan, Shane] – Completed on 1/26. The remains of the guitar were also salvaged for useful parts.
- Begin amplification circuit design for hexaphonic pickup [Shane] – Generated a circuit schematic for the Op Amps.
- Complete Android Studio tutorials [Ryan] – Completed on 1/28. Ryan has also designed a user interface.
- Research potential motors for final design [Michael, Duke] – Obtained models of steppers and servos to examine.
- Decide on and order a microcontroller [Jules] – Decided on Raspberry Pi Model 2 B. Expected delivery is 2/2.
- Identify a specific approach to convert hexaphonic pickup data to Fourier transforms [Jules] – Went to Tiva tutorial.
- Assign sections for the preliminary report [All team members] – All sections have been assigned.
- Brainstorm and diagram a method for connection of the design to the guitar [All team members] – Generated a sketch for the overall design.

Goals for the Next Week

- Write preliminary report [highest priority; All team members].
- Examine existing stepper motor and order more if necessary [Duke].
- Order Couplers to mount stepper motors to design [Michael].
- Contact TAs via group email to find out where to research Fast Fourier Transforms and how to work with Raspberry Pi [Jules].
- Determine final op amp circuit and order necessary op amp chips [Shane].
- Research Android Bluetooth API; implement and test software if feasible [Ryan].

Unresolved Problems

- Need to remove screw mountings from hexaphonic pickup so it will fit in the guitar. We need to do this without damaging the pickup.
- Ryan has begun to look into the Android/Java Bluetooth API, but has determined testing any form of Bluetooth communication will be difficult while the design is still being built. Do you have any testing recommendations for him?

Questions

Our ideas for the Bluetooth application in the design is for it to initially transmit a signal to start the design and then go into a receiving mode where it displays the frequencies of each string during tuning. Is this practical to do with Bluetooth technology? Will this type of readout be sufficient verification that the design is working when it is finished?

Other information

None.