

Staff Meeting

February 22, 2018

Executive Summary: The NRL Arch team obtained valuable information to assist the individual team members with their third individual analysis

Meeting Minutes

6:00 pm – Mitchell explains how during the acquisition of the new motor driver, that the team may possibly need to procure a new motor. FRITZING was discussed as an easy and inexpensive means of creating an electrical diagram.

6:05 pm – Zack explains the rationale behind the NRL Arch team's decision to use an accelerometer as part of the design; rather than use it for obtaining the position data of the Arch's two arms, the accelerometer's gyroscope will be used to measure the vibrations in the arms. Zack stated his intention to conduct an analysis to determine the viability of using the cheaper and smaller accelerometer module included in the Arduino starter kit rather than spending the budget on larger, more expensive industrial sensors.

6:07 pm – Mitchell asks questions regarding encoder inputs. Daniel explains that it is desired to obtain speed control via Arduino commands. Dr. Trevas suggests the use of a PID loop. Various methods are discussed.

6:09 pm – Jacob asks about his individual analysis in terms of the turning of strings and/or keys to ensure that the tabletop will remain level for the stability of the sample during NRL Arch tests. Allowable tolerance yet to be determined. Need strength of string. It is suggested that MATLAB be used for calculations.

6:15 pm: Team Action Items

- Danny will continue to work on his deflection analysis and the build manual for the NRL Arch device.
- Mitchell will continue developing the stepper motor Arduino code as well as investigating the use of FRITZING for creating the wiring diagram.
- Jacob will develop the equations necessary for determining the number of turns needed for the keys to obtain desired wire tension.
- Zachary will develop an experimental procedure for testing the Arduino starter kit accelerometer for his individual analysis.