* **Projects Descriptionm:**
* **1) 2.29 code: Put presentation as one of the pics**
* Analysis of Higher order Schemes and their implementation in optimal path planning algorithms
* You know what is awesome? Traveling! You know what is even more awesome? Finding the fastest way to travel! As such, I implemented a higher order scheme for level set tracking to determine if a more accurate and time optimal solution exists to enhance path planning algorithms for underwater vehicles. This was done through the development of code to test against existing path planning models.
* (maybe link to github)
* **2) So many carbon nanotubes!!**
* To better handle and process continuous carbon nanotubes, I designed, fabricated and assembled a web-handling system to guide carbon nanotubes from roll to roll. After recognizing that a resin medium was better for post processing, I designed, fabricated and assembled a CCNT transfer assembly for CCNT transfer from steel to resin medium. Who said dealing with small tubes was so hard?
* **3) Radon Mitigation System (I can breathe clearly now the Radon is Ra-gone)**
* After ruling out that pollen was a huge contributor to my breathing issues, a quick google suggested that the effects of Radon Gas can cause problems. I decided to take action! I dedicated the next 4 months to researching, testing, and developing a way to remove radon from my home. I designed and tested a radon mitigation system which resulted in a decrease in radon concentration from well above the accepted limit to well below. (what is the accepted limit, what is your data? Find this ish)
* **4) Lotto ticket number Generator (winner winner chicken dinner)**
* As a poor college student, and due to it being a tame summer evening, I decided to try and “game the lotto”. It’s totally foolproof I thought! I developed python scripts to parse a large dataset of lotto numbers to determine frequency of each number and develop a frequency count for each. Consequently, I created a “selector” tool to spit out a new lotto number based off of the relative frequencies of the previous numbers.
* **5) 2.007 robotics competition (put link to youtube video)**
* Designed, built, and assembled a rope climbing robot for use in MIT’s 2.007 robotics competition. Spent a decent amount of time in a machine shop gaining experience with rapid prototyping tools.
* **6) Redbeam (put pick of Gui) (Pew Pew Pew)**
* I like to be mentally stimulated constantly, as such (and during a lull in a summer internship), I identified a potential problem with utilizing the laser cutter in its current configuration to create parts. In order to quantify the magnitude of this problem, I developed an image-processing tool for characterizing parts cut from the laser cutter. This image tool tested for edge cut quality (a function of the deviation from the circumference of a circle) and concentricity (a function of the center distances and the larger radius). I packaged the tool into a GUI for ease-of-use and repeatability.
* **7) Controls Scheme for small stress/strain measurements**
* Developed the controls scheme for a biaxial tension tester. The machine now can run high resolution biaxial strain measurements while also logging loading data for post processing. Controls can be run from command line. Packaged them up into a GUI for ease-of-use.
* **8) xFair**
* I am the corporate relations director for xFair, one of the larger projects that I take on. We hold a maker expo/career fair in one and connect students with employers.
* **9) UA Committee on Education**
* I am the chair of the undergraduate committee on education. Click the link above to see our plan for the year (link to plan)
* **10) Infinity**
* I wanted to make a cool bedside table for my sister, so I built an infinity table! Small bit of woodworking, but it was a lot of fun.
* **SKILLS**
* Image processing, Gui development, controls, Mechatronics, 3d printing