Benjamin Mangel

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Education

Georgia Institute of Technology | 2016 – 2020
- B.S. Mechanical Engineering – Major GPA: 3.01
- Minor in Computing & Intelligence
- Relevant Courses – Robotics, Experimental Methods, System Dynamics, Circuits & Electronics, Introduction to Artificial Intelligence, Manufacture & Design (DFM & DFA)

Work Experience

Undergraduate Research Assistant – Georgia Tech DART Lab, ROAMR project | August – December 2020
- Redesigned existing motor housing around resized motor optimized for human use
- Created original CAD models for alternate motor housing and gearing
- Designed 3D printed molds for carbon fiber parts

Director of Sports – Camp Ramah Darom | May – August 2019
- Created schedules for sports staff of 10 and camp-wide sports programs for 500 campers, ages 8-16
- Advised counselors-in-training on effective coaching, time-management, and leadership skills
- Collaborated with vendors to procure equipment in a timely manner

Technical Intern – IC3D | Spring 2018
- Created 3D-printed parts in Fusion360 for clients based on their specifications
- Reverse engineered and printed fan upgrades for 3D-printers in ABS, increasing melting point to 200C
- Compiled work instructions for newly acquired SLA Moai printer

Projects

Design for an Assistive Glove | Fall 2020
- Worked in team to design an adaptive external glove to aid stroke victims in grasping/ungrasping
- Personally responsible for all CAD for device in SOLIDWORKS; glove, cable management, connectors
- Presented weekly reports to advisor, poster, and final video at Georgia Tech Capstone Expo Fall 2020

Prediction of Heart Disease Risk | Fall 2020
- Team created models of heart disease risk prediction using machine learning algorithms with Python
- Used data from Cleveland Clinic medical study to train and test supervised learning models
- Reported similar or better precision, accuracy, and recall in all new models compared to previous

Dwayne "Only Throws Rock" Johnson | Spring 2020, Spring 2021
- Develop a "Rock-Paper-Scissors" robot with Matlab Image Processing Toolbox, computer vision focus
- Project canceled due to Covid-19 in Spring 2020, restarted individually in Spring 2021

Black Widow | Spring 2018
- Developed competition robot within budget of $100, finished 2nd in design review, 10th in competition
- Used mechatronics principles to program motors, solenoids, & air tank valves with LabView on NI MyRIO

Skills

Software: Autodesk Inventor, SOLIDWORKS, Fusion360, MATLAB, Java, Python, LabView, Markdown
Instrumentation: Basic machining tools, mill, drill press, lathe, woodshop tools, SLA & FDM 3D printers
Interests: Robotics, Automation, Artificial Intelligence, Mechanical Design, 3D Printing
Communication: Presentations, team building, fundraising, community outreach, video editing
Athletics: Hockey (collegiate club), baseball, ultimate frisbee; Level 3 Hockey Coach (2019)