Jesse L. Grupper

Education

Tufts University - Medford, MA

Bachelor of Science, Mechanical and Biomedical Engineering, May 2019
GPA: 3.68, Dean's List

Relevant Coursework: Biomechanical Engineering Design, Mechanical Design and Fabrication, Human Centered Design, Biological Systems Engineering, Computational Design, Linear Algebra, Modern Physics

Skills

Computer: LabVIEW, MATLAB, C++, 123D Design, SolidWorks, HTML, Microsoft Word, PowerPoint, Excel
Fabrication: Laser cutter, 3D printer, molding, casting, water jet, drill press, chop saw, horizontal band saw

Projects

- Pedal Power – Converting rotational energy to electrical energy for bike travelers' smart phones.
- The Smart Cane – A device to help the elderly find their cane with radio frequencies and a homing device.
- The Coin Coaster – An educational toy made of different 3D printed coin tracks to help kids save money.
- Collapsible Tupperware – More modular Tupperware to help students save space.
- Iron Hand – An assistive device to help a boy with ectrodactyly play hockey.

Engineering Experience

Fuel Cell Manufacturing R&D Golden, CO
Undergraduate Research Intern June 2018 – July 2018

- Developed quality monitoring methods for in-line high-volume manufacturing
- Used thermal and optical scanning to determine Polytetrafluoroethylene and catalyst electrode loadings
- Generated a model for experimental optical and thermal scanning data
- Measured penetration depths of electrode loadings using reflective properties of materials

Dr. Barry Trimmer's Neuromechanics and Biomimetics Lab Medford, MA
Undergraduate Research Assistant October 2016 – July 2017

- Fabricated soft robotic prototypes to aid in natural disaster relief
- Controlled robot motion with an electromagnetic motor and clutch array using a rotary encoder and an Arduino
- Constructed and tested different types of rotary encoders to maximize efficiency and accuracy in prototypes.
- Tracked robot motion and velocity using a camera and Kinovea software
- Collaborated with peers to design iterations of prototypes and presented these prototypes at lab meetings

Next Step Orthopaedics Caldwell, NJ
Orthotic and Prosthetic Assistant June 2015 - July 2015

- Molded and casted lower-extremity prostheses for patients using plaster casts and carbon fiber
- Created casts for patients with drop-foot
- Organized the tools and casting materials

Student Involvement

Biomechanics Club Medford, MA
Founder and President January 2018-Present

- Creating a space to help students discover careers and build projects in the field

Residential Life Medford, MA
Resident Assistant January 2017 – May 2017

- Provided paraprofessional conflict advising to students to ensure their comfort and safety in the building
- Led programming events for over 25 students

Other Experience

Peak Potential Montclair, NJ
Lead Volunteer November 2013 – May 2017

- Taught climbing to children with physical disabilities
- Strengthened weaknesses in children by assisting them to move on the climbing wall

Professional Climbing Career

Climbing

- Placed 5th at World University Championships Bratislava, Slovakia 2018
- Placed 1st in Sport and Bouldering at USA Climbing's Collegiate Nationals Houston, TX 2017
- Awarded the North Face Young Gun for Good Sportsmanship Atlanta, GA 2015