Randy Butternubs

(555) 555 5555
sugar.tits@ucdenver.edu
nubs

Education

Graduated Dec 2014 — **B.S. Mechanical Engineering**, *University of Colorado Denver.*

- GPA: 3.43
- Unique courses: Plasticity & Metal Forming, GD&T, Lean Manufacturing, Biomechanics

Projects

Fall 2013–Spring 2014 — **Project Leader**, *Rehabilitative Exoskeleton, UC Denver.*

Led senior design team of 7 to successfully design and manufacture rehabilitative pneumatic leg exoskeleton. Project won Senior Design Competition of Spring 2014

- Organized team, defined/achieved tasks and deadlines, created BOM, managed budget
- Defined customer requirements such as device weight of no more than 60 lb, cost of no more than $3000, and joint ranges of motion
- Programmed in MATLAB with motion capture data to determine dynamic joint data
- Utilized SolidWorks with FEA to design over 15 parts with target safety factor of 2.5
- Designed ankle joint that mimicked human ankle torque and range of motion to within 5% and 7% respectively

Fall 2014 — **Manufacturing Specialist**, *Pure Bending Moment Device, UC Denver.*

Manufacturing specialist on team of 4 working closely with professor that successfully designed and manufactured pure bending moment device to measure strain and torque on sheet metal

- Programmed CAM files from solid models which were then used with CNC mills and lathe to machine over 20 different parts. Drawings detailed with GD&T
- Measured small strains with strain gauge and large final strain with interferometry
- Used LabVIEW and torque transducer with 0.28 sensitivity to calculate bending moment
- Experimental moment values from device were predicted by plasticity theory within 10%

Winter 2014–Present — **Personal Robotics Project**, *Interactive Table-top Map.*

Programming with Arduino/Python to develop an interactive, projected-image table-top map

Technical Skills

Computer — **Proficient With:** SolidWorks, MATLAB, MathCAD, Arduino.

Familiar With: LabVIEW, LaTeX, Python, Abaqus.

Laboratory/Workshop — **Material Testing:** Experienced testing material mechanical and thermal properties with techniques such as tensile testing and dynamic mechanical analysis.

Machining: Comfortable with a variety of fabrication equipment including hand tools, band saws, and HAAS CNC milling, drilling, and turning tools.

Work Experience

Fall 2012–Present — **Barista**, *Starbucks*, Average 35 hours/week.

- Increasing sales by analyzing customer preference and suggesting merchandise
- Improving interpersonal skills by providing excellent customer service on a fast-paced team