

Scott David Woods

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EDUCATION

University of California, Berkeley, Bachelor of Science- Junior, Graduating May 2018

- Major: Mechanical Engineering Minor: Energy Engineering
- GPA/4: Cumulative: 3.63 Technical: 3.63

EXPERIENCE

Wooden Window Inc., Oakland CA

Summer 2016

- Manufacturing Engineering Intern: Evaluated wood shop efficiency across multiple departments in order to improve production efficiency. Wrote and added 7 new work instructions to the company database for new employee education purposes

CalSol: UC Berkeley Solar Car Team

Fall 2016-Present

- Brake and Accelerator Team: Design of the accelerator and brake system to deliver smooth power and braking, provide better comfort for the driver, and resist potential loading conditions. Ground up design from drawing, to CAD, to testing, to manufacturing and attachment to the car

Cal Mars Rover: Mars Rover Competition

Spring 2016-Present

- Arm and Chassis Team: Collaboration with small team for mounting and actuation of rover arm on the chassis. Part design, selection, and fabrication for light but high strength assembly. Multidisciplinary design analysis and collaboration with faculty for optimization.

Lab Experience and Projects

- Wind Turbine Team Competition: 3D Designed and printed a rotor for maximum power conversion, and a tower for maximum strength under wind load. My team placed 2nd in tower strength
- Magnetic Levitation: Design of analog controller for control of solenoid for the levitation of a steel ball. LED and photo-resistor for detection of ball position and summing amps for actuation
- Inverted Pendulum Balancer: Controller design for position and balance control of non-linear inverted pendulum using Simulink and Quansar hardware. State space design with estimator for control of 4 states with 2 encoders. Multi-phase controller for self-erection and then self-balance.
- Capacitive and Resistive Touchscreen: Designed a capacitive circuit with op-amp comparators for touch detection, as well as a voltage divider resistor arrangement for 9 button touch screen
- Mountain Bike Shifter: Designed and prototyped an electromagnetically actuated disk system to replace the traditional gear system for mountain bikes. Working with long time friend to transition to a hydraulically actuated but lightweight continuously variable transmission design
- Charger Cable Enclosure: Designed and 3D printed an attachment for MacBook charger cable to smoothly uncoil with minimal effort using springs, ratchets, and electrical brushes

LEADERSHIP

Berkeley Hyperloop R&D Team

Fall 2015-Present

- Project leader for variable lift team: Work with a group of 3 for design of mechanism for angle variation, materials testing, static and dynamic modeling, FEA, controller design and simulation, full 3D print, and circuit design for actuation using Arduino. We achieved low resolution angle tracking

SKILLS

Programming and CAD

- Proficient: Solidworks, MATLAB, Controller design in MATLAB, Simulation in Simulink, Object Oriented Programming in MATLAB, Excel and Word
- Familiar: LabView, Autocad, Python, Arduino, FEA in Solidworks, Cura Splicing

Prototyping/Fabrication and Testing

- GD&T, Conventional machining, wood shop, 3D printing, laser cutting, knowledge of large scale manufacturing processes for metals and plastics, electrical measurement equipment and circuit design
- Monotonic tensile and toughness testing and analysis of steel, aluminum, and polymers. Heat treatment and analysis of steel, fatigue and life cycle testing using Instron test equipment