James Ho

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EDUCATION

University of California, Santa Barbara Class of 2019
B.S. Mechanical Engineering – Senior GPA: 3.1/4.0
Relevant Coursework – Computer Aided Design, Thermodynamics, Vibrations, Fluid Mechanics, Mechatronics

TECHNICAL SKILLS

- Engineering – SolidWorks CAD & CAM, COMSOL, MATLAB, Arduino, C++
- Manufacturing – Milling, Lathing, Soldering, Brazing, Welding
- Software – Microsoft Windows, Office Suite, Android OS, LaTeX, AHK

PROFESSIONAL EXPERIENCE

Mechanical Engineering Intern June 2018 – Present
Santa Barbara Infrared, Inc. *Santa Barbara, CA*
- Design and improve precision optical components used in the testing of aircraft and military vehicles
- Use dynamic FEA to investigate and reduce the vibrations caused by harmonic motion in gimbal frames
- Generate fabrication and assembly drawings while minimizing the amount of tolerance stack-ups
- Produce bills of materials and engineering change orders to record and maintain revision control

Senior Teaching Staff March 2017 – Present
UCSB Engineering Machine Shop *Santa Barbara, CA*
- Consult with shop members working on projects after analyzing their CAD models
- Advise members the most optimal way to fabricate parts under ISO, ANSI or ASME standard tolerances
- Supervise and instruct engineering students how to operate machining equipment and tools
- Machined a fully functional two-stroke piston air motor that operates at 3200 max RPM

Mechanical Engineer Intern Spring 2018
Vascular Biosciences *Santa Barbara, CA*
- Responsible for assembly and quality control inspection of a cardiovascular biopsy catheter
- Machined a custom jig to rigidly support catheter tube during epoxy bonding, accelerating production time by 30%
- CAD designed a mount for the catheter deploying mechanism to allow repeatable one-handed operation
- Trained to operate daily in an ISO Class 7 cleanroom under formal FDA regulations

RELEVANT PROJECTS

UCSB Racing – Formula SAE March 2017 – Present
- Responsible for the ongoing design and manufacturing processes of a Formula level race car
- Manage design of the chassis to mitigate stress on critical points and optimize aerodynamics
- Conduct multiple FEA tests on mainframe to demonstrate and improve total structural rigidity
- Collaborate with suspension and drivetrain team members to ensure that all external fitments are exact

Electric Bicycle Project Summer 2018
- Independently researched, designed, and built an electric bicycle from scratch, capable of delivering five horsepower
- Fabricated custom motor mounts and li-ion battery pack; implemented gearing to optimize torque vs. speed tradeoff
- Concluded through testing that bike outperforms commercial e-bikes in terms of range, power, and weight
- Created a comprehensive report documenting the assembly process, bill of materials, and testing analysis

Automated White Board Eraser Spring 2018
- Created an electric white board eraser powered by two electric motors using a dual H-bridge
- Determined the best materials in terms of strength and manufacturability under a very limited budget
- Incorporated single touch activation using a switch controlled by Arduino for simple user experience

CAD Robot Competition 1st Place Spring 2016
- Designed and built a fully functional robot using SolidWorks as the primary design tool
- Used Arduino interface to control all the robot's servo motors and actuators simultaneously
- Programmed robot to perform movements in sync with a soundtrack provided by the competition
- Received first place among over ten competing teams at the final design showcase

EXTRACURRICULARS

Self-Taught Automotive Technician
- Able to diagnose most vehicle issues using the OBD-II interface and execute the repairs accordingly
- Performed complete changes of timing belt, valve cover, rear axles, suspension assembly, and exhaust system

Alpha Phi Omega – Psi Chapter
- Professional co-ed leadership and service-based fraternity
- Commit to an average of 40 hours of community service per quarter