

Herbert Hsu

(650) 919-3878 | herbhhsu@umich.edu | San Francisco Bay Area

Portfolio

SUMMARY

Mechanical Engineer with experience in rapid prototyping, design and development of consumer and industrial products. Experience includes some electrical engineering and software engineering giving me the ability to work effectively with integrated product development teams.

RELEVANT ENGINEERING EXPERIENCE

Intel Corporation, Mask Operations | Santa Clara, CA

Aug 2019 -Present

TD Module Process Engineer

- Designed and tested equipment necessary to exploit the understanding gained in research (in house and in collaboration with equipment suppliers)
- Designed, executed and analyzed experiments necessary to meet engineering specifications for manufacturing processes, increased tool uptime and product yield.
- Worked with equipment supplier to identify shortcomings, proposed and evaluated hardware modification to mitigate issues and supported repairs.
- Operated and oversaw manufacturing line in group (5+ tools), worked with technicians in order to integrate and ensure quality of the manufacturing process of semiconductor photomasks.

Skills: SolidWorks, FEA, Python, SQL, SPC, rapid prototyping, DOE

Senior Capstone Project, University of Michigan | Ann Arbor, MI

Sept 2018-Dec 2018

All-Terrain Wheelchair

- In team of 7, designed & built a complete all-terrain electric wheelchair allowing more access to the wilderness. Wheelchair capable of going over snow, sand, and rough terrain. Gathered requirements from project sponsor & met weekly. Responsible for managing large SolidWorks assembly and designing & building control system with open-source Arduino microcontroller. Utilized various manufacturing methods including milling, lathing, welding & 3d printing. Completed within budget (\$2k). *Tools: SolidWorks, Hypermesh, C*
[\(See portfolio\)](#)

Transportation Research Institute, University of Michigan | Ann Arbor, MI

Sept 2018-Dec 2018

Engineering Intern

- Designed, built & tested canine crash test dummies for commercial pet restraint products. Created first prototype with moveable joints within 4 months. *Tools: SolidWorks* [\(See portfolio\)](#)

UVFAB Systems | Walnut Creek, CA

Jul 2018-Aug 2018

Mechanical Engineering Intern

- Researched & created conceptual design for a new consumer air purifier using titanium oxide photocatalytic reaction for air purification. Created conceptual 3D models & 2D detailed machine shop drawings for manufacturing. *Tools: SolidWorks*

GM/University of Michigan Smart Materials and Structures Lab | Ann Arbor, MI

Sept 2017-Dec 2017

Research Assistant

- Designed & built a high-speed CNC bladder maker capable of producing heat- sealed inflatables up to 4'x4' for General Motors. Assessed printer quality by testing 11 samples with different geometry. *Tools: SolidWorks, G-code* [\(See portfolio\)](#)

Institute of Oceanography, National Taiwan University | Taipei, Taiwan

May 2017-June 2017

Mechanical Engineering Intern

- Lab has weather buoys around the island. Developed a data visualization application that displayed ocean/wind currents in a Google-earth style globe. Learned JavaScript & HTML to complete project. Analyzed/tested the application. *Tools: JavaScript/Python/HTML/JSON.*

Content Intern

- Educational non-profit for STEM subjects in K-12 classes. Created over 50 interactive math and physics games using web-based design program on the CK-12 platform.

EDUCATION

University of Michigan | Ann Arbor, MI

2019

B.S.E in Mechanical Engineering, Magna Cum Laude

Coursework: Controls, Circuits, Statics, Dynamics & Vibrations, Thermodynamics, Heat Transfer, Fluids, Project Management, Life-cycle analysis, Statistics.

Tecnun, Universidad de Navarra | San Sebastián, Spain

Summer 2016

SKILLS

Engineering Skills: Design for Manufacturability (DFM), geometric dimensioning & tolerancing (GD&T), engineering drawings, machine shop (milling, lathing, welding), 3D printing, microcontrollers, lab equipment, Design of Experiments (DOE), heat transfer analysis, structural analysis, thermodynamics, FEA, Data Analysis.

Computer Skills: MATLAB, SolidWorks, Simulink, C++, Java, Python, G-Code, HTML, Linux, JSON, ADAMS, Hypermesh, MS Excel, PowerPoint.

Languages: English (native), Mandarin (fluent), Spanish (beginner)

OTHER ACTIVITIES

Apparel Chair, Alpha Tau Omega Fraternity: Designed, ordered and managed budget for apparel in fraternity with over 70 members.

FRC Robotics Team, Mountain View High School: Created small SolidWorks models and manufactured metal parts for the team.

California Philharmonic Youth Orchestra: Violin.

Hobbies: graphic design, embedded electronics.