

David Van Dyke

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EDUCATION

Stanford University

Master of Science in Mechanical Engineering

Palo Alto, Ca

June 2021

University of Michigan

Bachelor of Science in Engineering in Mechanical Engineering

Ann Arbor, MI

May 2019

Minor in Electrical Engineering, Engineering Honors Program

GPA: 3.9/4.0

Awards: 1st place Makeathon IV & V, 2nd place Makeathon VI, Robert M. Caddell Memorial Scholarship

Coursework: Programming and Data Structures, Embedded Control Systems, Control Systems Analysis and Design

PROJECT EXPERIENCE

Alulu Camera – alulucamera.com

Ann Arbor, MI

Co-Founder and Hardware Engineering Lead

May 2019 – August 2019

- Collaborated with a programmer and industrial designer to invent a camera capable of instantly printing photographs on thermal paper and launched the product on Kickstarter, raising \$20,887
- Led mechanical and electrical design by modeling and 3D printing the camera body as well as building the electrical system to control and power the camera; built three working camera prototypes over two months

Michigan Hybrid/Electric Racing

Ann Arbor, MI

Chassis Design Lead

May 2018 – January 2019

- Designed a spaceframe chassis and used 1-dimensional beam analysis to optimize the weight and stiffness
- Built an Excel spreadsheet to calculate a brake pedal that met design requirements while reducing size/weight
- Modeled the cars suspension in SolidWorks and ran design studies to optimize cornering performance

Vehicle Dynamics and Chassis Division lead

May 2017 – April 2018

- Led design and manufacturing of the suspension, corners, chassis, steering, and pedalbox for the 2018 car with a \$5000 budget and increased division membership by 300% in one year
- Conducted static analysis in ANSYS of suspension and chassis components to lightweight designs

Chassis Manufacturing

Sept 2015 – April 2017

- Developed and milled a jig system for the spaceframe chassis to prevent warping and TIG welded the chassis

All-Terrain Wheelchair

Ann Arbor, MI

ME 450 Senior Design Project

Sept 2018 – Dec 2018

- Collaborated with six other mechanical engineering students to design and build a wheelchair capable of traversing sand and forest terrains for a local resident
- Led design for the high voltage power and low voltage controls system for the vehicle and built a system capable of powering and controlling the wheelchair within one semester for \$500

WORK EXPERIENCE

Shih Biomedical Research Lab

Ann Arbor, MI

Assistant Researcher

May 2018–May 2019

- Performed calculations and conducted preliminary tests to determine the viability of using ultrasounds to measure spinal bone thickness during surgery
- Using a 3D scan of a rat skull, designed a cap that would screw onto a rat skull to prevent infections and hold brain probes for prolonged tests which was published at the MSEC 2019 conference
- Created the world's most accurate plastic phantoms for mimicking the behavior of microwire insertion into rat brains providing a humane alternative to testing microelectrode designs using in vivo rat brains

Tangent Models

Princeton Junction, NJ

SolidWorks CAD Designer

May 2017–Aug 2018

- Designed high quality scale models of 1950's era train box cars using SolidWorks for injection molding
- Managed large assemblies with external references and design tables to create configurable designs

SKILLS

Applications: SolidWorks (Certified Professional, License C-M6BV6KJ5WR), Siemens NX, Simulink, KiCad

Languages: C++, MATLAB, HTML, CSS

Manufacturing: TIG Welding, Milling, 3D Printing, Sewing