# David Van Dyke

dhvd@stanford.edu - (609) 915-0656 - www.dhvd.net

## EDUCATION

**Stanford University** — Palo Alto, Ca
*Master's in Mechanical Engineering, focus in design* — *June 2021*

**University of Michigan** — Ann Arbor, MI
*Bachelor of Science in Engineering in Mechanical Engineering* — *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 Engineering Lead* — *May 2019 – August 2019*

- Collaborated with a programmer and industrial designer to create 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