David Van Dyke

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EDUCATION

Stanford University - *Master of Science in Mechanical Engineering* *April 2021*
Focus in Design and Mechatronics *GPA: 4.0/4.0*
Coursework: Smart Product Design (ME218), Engineering Design Thinking, Innovation, Entrepreneurship (ME310), Principles of Computer Systems (CS110 – Fall 2020), Decision Making Under Uncertainty (CS238 – Fall 2020)

University of Michigan - *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

WORK EXPERIENCE

Waymo *Mountain View, CA*
Mechanical Engineering Intern *June 2020 – Sept. 2020*
- Improved the efficiency of the computer cooling system, allowing the use of higher speed processors on the car, while simultaneously reducing weight and cost of the system, each by 9%
- Created prototype hardware to test new computer components in a laboratory setting

Shih Biomedical Research Lab Ann Arbor, MI
Assistant Researcher *May 2018–May 2019*
- Created the world's most accurate plastic phantoms for mimicking the behavior of microwire insertion into rat brains which will save the lives of rats in the future since testing can be done on this phantom, not real rats

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

PROJECT EXPERIENCE

Smart Product Design Projects – Stanford ME218 Palo Alto, CA
Hardware Engineer *Sept 2019 – June 2020*
- Designed and built an autonomous robot based on a TIVA microcontroller that could traverse a course using data from IR beacons, a color sensor, and an accelerometer to compete in a game
- Created a frequency-based audio protocol and programmed a PIC to encode/decode these messages

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 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

Vehicle Dynamics and Chassis Division lead *May 2017 – April 2018*
- Led design and manufacturing of all the cars mechanical systems with a $5000 budget
- Taught new members SolidWorks, manufacturing skills, and increased division membership by 300%
- 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

SKILLS

Applications: SolidWorks (Certified Professional, License C-M6BV6KJ5WR), Siemens NX, Catia, Simulink, Ansys
Languages: C, C++, MATLAB, Python, HTML, CSS
Manufacturing: TIG Welding, Milling, 3D Printing, Sewing