David Van Dyke

6 Snowbird Court, Princeton Junction, NJ
dhvd@umich.edu - (609) 915-0656 - www.dhvd.net

EDUCATION

University of Michigan Ann Arbor, MI
Bachelor of Science in Engineering in Mechanical Engineering *May 2019*
Minor in Electrical Engineering, Engineering Honors Program *GPA: 3.90/4.00*
Awards: Tau Beta Pi MI-G First Year Student Award, Outstanding Peer Mentor, 1st place Makeathon IV & V
Coursework: Mechanical Behavior of Materials, Programming and Data Structures, Controls, Signals and Systems,

PROJECT EXPEREINCE

Michigan Hybrid/Electric Racing Ann Arbor, MI
Chassis Design Lead *May 2018 – Present*

- Designed a spaceframe chassis in Siemens NX and optimized the stiffness for ideal cornering performance
- Created an excel spreadsheet that iteratively calculated 3000 brake pedal configurations to design a brake pedal that met mechanical advantage requirements while being ½ the length of the previous year's design
- Built a 3-dimensional sketch of the suspension in SolidWorks and ran design studies to optimize system parameters such as camber and toe change in roll as well as create graphs of the results

Vehicle Dynamics and Chassis (VDC) Division lead *May 2017 – April 2018*

- Led design and manufacturing of the suspension, corners, chassis, steering, and pedalbox for the 2018 car
- Managed a $5000 budget and increased division membership by 300% in one year
- Managed the GrabCad PDM and taught SolidWorks to over 20 new members of the team
- Conducted static analysis in ANSYS of suspension and chassis components to lightweight designs

Chassis Manufacturing *Sept 2015 – April 2017*

- Developed and milled a jigging system for welding the steel spaceframe chassis to prevent warping and TIG welded the entire chassis in 2 weeks, faster than the team had ever done previously

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 with an impossibly small budget

WORK EXPERIENCE

Shih Biomedical Research Lab Ann Arbor, MI
Assistant Researcher *May 2018–Present*

- 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; it is modeled such that the end user can easily make changes to the model to make it fit any rat skull
- Created plastic phantoms to mimic the behavior of microwire insertion into rat brains and conducted factorial tests to determine the exact concentrations of different plastics that created the desired behavior. Used regression equations to interpolate the results to modify the phantom for different types of 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. Each model is accurate to the actual train car to a tolerance of 0.25"
- Created 600+ features parts and managed large assemblies with external references and design tables to create configurable designs

SKILLS

Applications: SolidWorks (Certified Professional, License C-M6BV6KJ5WR), Siemens NX, ANSYS
Languages: C++, MATLAB, HTML, CSS
Manufacturing: TIG welding, milling, 3D printing