

Mark Bobich

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OBJECTIVE

I am searching for a design oriented mechanical engineering position for a manufacturer or supplier in the technology, automotive, or aerospace industry. My engineering team projects, CAD and manufacturing understanding, internship experience, and machine design coursework have given me the foundation required to excel in the competitive mechanical design engineering field and I am eager to put it to use. I am driven to see the products I create define and revolutionize their industry and create societal impact.

EDUCATION

Purdue University

*December 2021
West Lafayette, IN*

- Bachelors of Science in Mechanical Engineering

ENGINEERING PROJECTS

Dual Composite Carbon Fiber 3D Printing Head – CAD Lead

August 2021 – December 2021

- Produced an unprecedented print head capable of extruding continuous and discontinuous carbon fiber simultaneously
- Implemented design with temperature and nozzle length variability to allow for research on the new composite concept
- Developed multiple machined prototype iterations to conduct experiments and analyze material composition
- Managed the CAD drawings and optimization of the design through Abaqus FEA

Skitter Robot

October 2020 – December 2020

- Coded a LabVIEW PID control system on a myRIO to control an AndyMark Skitter robot in a solo class project
- Measured and implemented the sensitivities of the motors, infrared sensor, and ultrasonic sensor in the PID system

Formula SAE

September 2018 – May 2019

- Modeled and machined iterations of suspension parts for a formula racing car as part of a fifty-person, competitive team
- Optimized individual part dynamics as a part of a large collective design to fit the adjustments to the new season's car design

Improved Shower Caddy

January 2019 – May 2019

- Instituted engineering design process as a team of four to create an upgraded shower caddy with a height adjustable stand
- Utilized consumer surveying and manufacturing optimization to justify marketability and create a final design and prototype

Mapping Robot and Autonomous Rover

September 2017 – May 2018

- Designed, built, tested, and Python coded two robotic vehicles as a part of a team of four
- Mapping Robot — Designed to autonomously map an unknown floorplan, identify items, and avoid radioactive obstacles
- Autonomous Rover — Constructed to follow a path, traverse unknown terrain, avoid obstacles, and deposit a payload

WORK EXPERIENCE

Darcoid Rubber Company

June 2019 – August 2019

Applications Engineering Intern

Oakland, CA

- Analyzed the functionality of various seals and designed new sealing solutions to rectify customer's performance issues
- Authored testing and project procedures, tested prototypes, created part drawings, and optimized inventory
- Worked intensively on improving bike/vehicle shocks, fuel filters, and bike components
- Prevented multiple design errors by conducting tolerance stack-ups and uncovered faults through failure analysis

LEADERSHIP AND INVOLVEMENT

Purdue Honors College Grand Prix Team

August 2017 – December 2020

Sponsorship Representative

- Designed, built, and optimized a go kart as part of a team of 20 to race competitively in the Purdue Grand Prix
- Versed in the physics of kart geometry, mechanics of a kart powertrain, and strategy of competitive racing
- Use data from testing to justify setup and improvement of kart's dynamics
- Responsible for building corporate relationships to provide club funding and coordinating the member's donations

Engineering Honors Peer Mentor

August 2018 – December 2019

Peer Mentor

- Assisted Honors freshman with weekly meetings as a leadership liaison for their transition to a college engineering workload

SKILLS

- Versed in MATLAB, Python, C, and R coding languages
- Expert in Computer Aided Design (CAD): CATIA, SOLIDWORKS, Creo, and Geometric Design & Tolerancing (GD&T)
- Proficient in Heat Transfer, Fluid Dynamics, and Finite Element Analysis (FEA): SOLIDWORKS, Ansys, and Abaqus
- Understanding of Electronic Components and Controls: LabVIEW
- Statistical Analysis and Iterative Engineering Project Experience
- Extensive knowledge of the Machine Design, Design for Manufacturing (DFM), and Machining Processes
- Trained in Seal and O-ring Design and Analysis

INTERESTS

- Enjoy exploring my artistic side with film photography and my athletic side with hiking, basketball, and snowboarding
- Love to have an IPA and watch sports like football, college basketball, and formula one!