Jackson Davitt

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Education

California Polytechnic State University — San Luis Obispo, CA
Bachelor of Science in Mechanical Engineering — *September 2020 – June 2024*

Work Experience

Associate Manufacturing Engineer — September 2024 – Present
P.A. Bet, Inc. — *San Carlos, CA*

- Led the development of 40+ design submittals, communicating with architects and general contractors to resolve design issues and gain approval for production
- Developed CNC programs in bSolid for unique components on a 5-axis mill, with a first-pass success rate exceeding 95%
- Improved production efficiency by generating accurate BOMs for 10+ projects, applying DFM principles to ensure all parts were easily machinable and minimized material waste
- Performed field measurements on 5+ projects to confirm critical dimensions and resolve conflicts between design plans and site conditions before fabrication

Product Development Engineer Intern — June 2023 – September 2023
SawStop — *Tualatin, OR*

- Designed a cam-based blade motion arresting mechanism and validated performance through iterative prototyping and hands-on mechanical testing
- Using feedback from design reviews, key components in the system were redesigned for injection molding after passing functionality tests, reducing costs by 75%
- Created a Python tool to filter an axial-rotation accelerometer signal to produce angular position plots for test data analysis
- Designed and built a mechanical test bench adopted by multiple departments that reduced test time for subsystem components

Brakes Subsystem Engineer — September 2021 – May 2023
Cal Poly Racing Formula SAE — *San Luis Obispo, CA*

- Designed an adjustable throttle pedal assembly with a sliding rail base and interchangeable springs to accommodate 3 driver sizes, improving control consistency and feedback across 2 vehicle platforms
- Machined housing and linkage components for a preloaded spring assembly that introduced pedal resistance and improved driver feel, using manual mill and lathe
- Prepared a used carbon fiber monocoque mold for reuse by sanding, sealing, and recoating surfaces to minimize voids and surface imperfections during layup

Projects

Senior Project - Pipe Inspection Device for NAVFAC EXWC — September 2023 – June 2024

- Developed and tested a compact robotic chassis for autonomous inspection of 8” diameter potable water pipes, with a cantilever suspension system debris-prone environments underwater
- Prototyped and iteratively tested flexible airless tires using FDM printing with FLEX filament to resolve deformation and traction issues, improving shock absorption and obstacle traversal in confined pipes
- Presented subsystem designs and trade studies to NAVFAC engineers, revising the main enclosure for improved assembly based on feedback regarding access and mobility in pipe environments

Bike Trailer Design Project — September 2022 – November 2022

- Designed and fabricated a PVC bike trailer to support a 100 lb load and conducted static FEA to evaluate deflection, comparing results with beam hand calculations to verify model accuracy
- Performed load testing to measure deflection, validating simulation predictions within 10%, and identified stress concentrations leading to proposed improvements of key joints documented in a technical report

Skills

Software: SOLIDWORKS (Modeling and Simulation), Fusion, Onshape, MATLAB, Simulink, ADAMS Simulation
Manufacturing Processes: Manual Lathe and Mill, TIG Welding, FDM Printing, Hand Tools
Techniques: Detail Drawing, GD&T, Hand Drafting