Jackson Burdorf

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Professional Summary

Mechanical engineer specializing in computer-aided design (CAD) and rapid prototyping. Skilled in SolidWorks, ANSYS, and MATLAB, with hands-on experience in manufacturable design, 3D printing, and mechanical systems development. Proven ability to optimize workflows, reduce costs, and enhance product reliability in R&D and new product development.

Education

BSE, Mechanical Engineering, Computational Mechanics Graduation: May 2025
Arizona State University, Ira A. Fulton Schools of Engineering

Work Experience

Research and Development Engineering Intern, Innovative Health LLC
Scottsdale, AZ (September 2024 - Present)

- Subject matter expert and department provider for Solidworks modeling and drawing creation, as well as rapid prototyping and 3D printing implementation. Led department effort for in-house test fixture design and prototyping, saving weeks of design and manufacturing time, reducing development costs by thousands of dollars, reducing the number of iterations required, and improving reproducibility for each fixture. Responsible for developing or revising over 30 pairs of top-level assembled models and drawings.

Research and New Product Development Engineering Intern, Cherne Ind, an Oatey Co. Company
Shakopee, MN (May 2024 - August 2024)

- Responsible for new product development including product design, material consideration, product safety verification, and rapid prototyping. Designed a 30% larger plumbing test plug for a cleanout tee capable of withstanding 80% greater force than the leading product in response to customer interest. Redesigned a recalled product to target improved reliability. Presented both product designs to upper management. Participated in a Habitat for Humanity build as part of the internship experience.

Mechanical Engineering Design Intern, Tetra Pak
Winsted, MN (May 2023 - August 2023)

- Collaborated with the business solutions group in customizing cheese production belt assemblies per customer needs. Spearheaded the development of a support tool designed to partially automate a previously manual sheet metal forming process, resulting in reduced worker fatigue and work efficiency improvement by upwards of 100 labor hours annually and reducing operation time by an estimated 70%.

Computer-Aided Design Private Tutor, Wyzant.com
Remote (January 2023 - September 2024)

- Educated over 50 individuals from varying backgrounds ranging from career professionals to college students to elementary students in the fields of computer-aided design software including TinkerCAD, Autodesk Inventor, and Solidworks, and mathematics including elementary, geometry, algebra 1 & 2, and calculus. Students saw grade improvements of 10% on average post-tutoring in respective subjects.

Production Worker, Engel Diversified Ind.
Jordan, MN (June 2021 - May 2024, seasonal)

- Operated over $1 million of fabrication equipment including CNC mills, press brakes, and deburring tumblers, and produced over 15,000 delivered products. Gained knowledge of fundamental manufacturing processes and best practices, including continuous improvement, commitment to customer service, and respectful treatment of employees.

Undergraduate Teaching Assistant, Arizona State University
Tempe, AZ (January 2023 - March 2023)

- Mentored new students in the engineering program as a section leader and held advisory sessions and office hours to provide guidance, academic counseling, and help to the students navigating the University system. Formally commended for exceptional performance by tenured professor.

Technical Skills

Computer-aided Design

- Solidworks & PDM
- Fusion360
- Autodesk Inventor & Vault
- Onshape
- Bill Of Materials Modeling (BOM)
- Parametric Design
- ASME Y14.5 GD&T Standards
- Advanced Model & Assembly Creation

Analysis

- ANSYS Simulation
- Finite Element Analysis (FEA)
- Stress & Strain Calculation
- Structural Evaluation
- Thermal Analysis
- Circuit Analysis

Prototyping and Manufacturing

- Manufacturable Design
- Hands-on Fabrication
- Additive Manufacturing (3D Printing)
- Mechanical Design Engineering
- Sustainable Design
- Fixture Design and Construction
- Material Sciences
- Production Processes

Software and Engineering Tools

- MATLAB
- Arduino
- Raspberry Pi
- Microsoft Office
- Java

Interpersonal Skills - Problem Solving | Leadership | Conflict Resolution | Strong Communication | Active Listening | Collaboration | Advocacy | Mentoring | Emotional Intelligence | Adaptability | Self-Starter

Projects – Arizona State University

Rewired Bionics Team, Lead Prototyping Officer
Tempe, AZ (January 2021 - May 2024)

- Collaborated on a team of 10 students for five semesters and managed a budget of over $1500 innovating a project for the Engineering Projects In Community Service (EPICS) program. Responsible for design, rapid prototyping, and testing procedure development for custom prosthetic hand attachment for use by a disabled veteran in need of a device to aid him in swimming. Managed two students on a subgroup of the project, coaching them on mechanical design, stress analysis, and fabrication techniques.

Fulton Undergraduate Research Initiative, Undergraduate Researcher
Tempe, AZ (May 2024 -August 2024)

- Researching properties and potential applications of auxetic negative Poisson's ratio metamaterials. Project enhanced written communication skills, analytical skills, and critical thinking. Created a research poster displayed at the Fulton Undergraduate Research Initiative (FURI) symposium.

Certifications

- **Certified Solidworks Associate - Mechanical Design**
- **Certified Solidworks Associate - Additive Manufacturing**

Interests

- **Blacksmithing**
  - Sword-making, patterned damascus steel creation
- **Martial Arts**
  - Brazilian Jiu-Jitsu, Muay Thai, Mixed Martial Arts
- **Maker Projects**
  - 3D printing, leatherworking, plastic forming, metalworking
- **Track and Field**
  - Record-holding shot put and Minnesota state championship qualifying discus thrower
- **Fire-breathing**
  - Award-winning fire-breathing performance