Isaac H. Einstein

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Summary

Mechanical Engineer specializing in biomedical device development, advanced materials, and CAD modeling. Seeking an R&D Engineer II position in the medical device industry to leverage expertise in design optimization, hands-on prototyping, and cross-functional collaboration to drive innovative product development.

Education

M.S. Mechanical Engineering | The Ohio State University | Columbus, OH *December 2025(Expected)*

B.S. Mechanical Engineering with Honors | The Ohio State University | Columbus, OH *December 2024*

- Business Minor, Computer Science Minor
- Honors in Integrated Business and Engineering, Honors Research Distinction in Mechanical Engineering
- **GPA: 3.960/4.000**

Experience

Graduate Teaching Associate | The Ohio State University | Columbus, OH *January 2025 – December 2025*

- Led and instructed multiple weekly lab sections of 18+ students in mechatronic design, strengthening hands-on engineering and problem-solving skills.
- Coordinated and oversaw 12-14 undergraduate teaching associates, optimizing schedules and grading consistency.
- Revamped course curriculum by updating all lab lectures, incorporating custom-designed visuals that improved student comprehension and engagement.
- Leveraged 3 years of prior experience as an Undergraduate Teaching Associate across 3 design-focused engineering courses, providing foundational insight into student mentorship and curriculum development.

Surgical Ablation Research & Development Intern | Medtronic | Minneapolis, MN *June 2024 – August 2024*

- Engineered and validated 3 new test methods for adhesive research, accelerating product development.
- Evaluated 8 adhesives based on performance metrics and manufacturing requirements, identifying optimal choices for production.
- Ensured product compliance with industry standards through collaboration with regulatory teams, resulting in elimination of non-compliant materials.
- Executed root cause analysis on a key underperforming component, implementing design improvements to help the device pass upcoming design reviews.
- Gained expertise in mechanical testing and generative design modeling.

Cardiac Surgery Research Intern | Medtronic | Minneapolis, MN *June 2023 – August 2023*

- Designed and prototyped 3 functional devices to evaluate cardiac tissue properties and contact force effects.
- Conducted 2 *in vivo* animal studies to test and validate prototype concepts.
- Created Python scripts that accelerated experimental data analysis, saving 4 hours per run; adopted by all team members to improve workflow efficiency.
- Investigated feasibility of novel epicardial ablation therapy, contributing critical data that guided strategic planning for early-stage development.

Master's Research Thesis | The Ohio State University | Columbus, OH *January 2025 – December 2025*

- Advanced 3D-printed implant technology for post-lumpectomy tumor cavity tracking.
- Evaluated multiple material properties to optimize implant design, applied findings to Finite Element Analysis models.
- Organized and led end-user interviews with radiation oncologists and surgeons to refine product design based on feedback.

Undergraduate Research Thesis | The Ohio State University | Columbus, OH *August 2023 – December 2024*

- 3D-printed and mechanically tested biodegradable composite materials for post-lumpectomy use.
- Optimized design and manufacturing processes for surgical applications.
- Successfully defended B.S. thesis and presented all findings at The Ohio State Graduate Showcase Poster Symposium.

Government Business Development Intern | Battelle | Columbus, OH *May 2022 – August 2022*

- Discovered new market opportunities for 3 projects across the business unit, driving revenue growth and cultivating client relationships.
- Created and implemented a Microsoft Excel tool to enhance time tracking efficiency and reliability.
- Submitted 2 proposals for DARPA and IARPA projects alongside business development team.

Fixed Equipment Engineer | ExxonMobil | Baton Rouge, LA *January 2022 – April 2022*

- Carried out stress analyses on piping circuits and pressure vessels, optimizing maintenance schedules.
- Automated overall design process for heat tracing systems, improving efficiency and eliminating uncertainties.
- Standardized templates and streamlined instructions, enhancing operational efficiency by over 50%.

Assistant Mechanic | Luke's Auto | Columbus, OH *May 2025 – August 2025*

- Assisted mechanics with daily car repairs, developing a practical understanding of mechanical system challenges and common failure points.
- Gained insights into how engineering design choices affect product serviceability, durability, and ease of maintenance in real-world scenarios.
- Developed a custom web tool that reduced documentation time by 75% and created an auditable record of shop procedures.

Technical Skills

- **Programming & Software:** Python (Data Analysis, Scripting), MATLAB, C/C++, Java, OpenCV, Arduino, Raspberry Pi, Microsoft Office
- **Engineering & Design:** SolidWorks, ANSYS, FEM, Generative Design, Biomedical Device Testing, Early Product Development, Machine Learning
- **Research & Development:** Experimental Design, Data Analysis, Root Cause Analysis, Technical Communication

Awards & Interests

- **Awards:** Lilja Hill Endowed Scholarship Fund (2024), Undergraduate Research Scholarship (2023), Maximus Scholarship (2020 – 2024)
- **Interests:** Medical Devices, Research and Development, Mechatronic Systems, Triathlons, Acoustic Guitar