Egan Bauersfeld

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EDUCATION

University of Colorado Boulder Expected Graduation Date: May 2028

- Bachelor of Science in Integrated Design Engineering GPA: 3.3
- Mechanical Engineering Emphasis
- 2024 Boettcher Scholar | Gold Medal Congressional Award

PROFESSIONAL EXPERIENCE

Colorado State University – Wilson Laboratory Fort Collins, CO

Undergraduate Optics Researcher May 2025-August 2025

- Designed and fabricated custom mechanical components to enable optical system functionality, including retrofitting outdated/incompatible technology when commercial solutions were unavailable
- Performed high-precision optical alignments and developed FF-OCT procedures including alignment sequences, calibration routines, and z-stack acquisition plans
- Collaborated with lab members to standardize procedures, and co-author a conference paper
- Maintained detailed lab records to ensure reproducibility and facilitate collaborative development of the system

ENGINEERING PROJECT EXPERIENCE

Statics Truss Project Boulder, CO

CAD Engineer August 2025-December 2025

- Produced complete CAD models and engineering drawings for design and fabrication review with a professional engineer, evaluating truss geometry, member sizing, and gusset design
- Performed structural analysis in MATLAB/Excel, integrating material test data to drive design decisions
- Led hands-on manufacturing and assembly, producing a truss that sustained 1.5× the required load capacity
- Prepared multiple technical engineering reports detailing material testing, structural analysis, safety factor calculations, and predicted failure modes

Thermodynamics Steady-Flow Device Boulder, CO

Electronics Engin August 2025-December 2025

- Modeled fan blades and airflow components in SolidWorks and assembled the compressed-air test rig
- Implemented an Arduino-based data acquisition setup to read, convert, and record flow measurements
- Conducted EES-based analysis to compare measured flow behavior with thermodynamic predictions

Web-Connected Smart Shelf Insert Boulder, CO

Project Manager/Mechanical Design Engineer August 2024-December 2024

- Led the mechanical design using CAD modeling and prototyping to develop the physical system intended for a web-connected smart shelf that improves accessibility in community pantries
- Collaborated with a five-person team to integrate mechanical, electrical, and digital design goals, conducting testing and iteration to improve durability, compatibility, and assembly efficiency
- Awarded **Best in Section** at the CU Engineering Fall Design Expo for excellence in product development, analysis, and presentation

SKILLS

Digital Tools: SolidWorks (CSWA), Fusion, AutoCAD, Visual Studio, Windows, MacOS, DaVinci Resolve
Optical and Imaging Systems: Interferometry, FF-OCT, Linnik configuration, Optical Alignment, Microscopy
Programming Languages: C++, MATLAB, Python, EES, Arduino
Mechanical Design/Fabrication: Lathe, Milling, Soldering, 3D Printing, Laser Cutting, Woodshop, Welding
Other Skills: Leadership, Project Management, Technical Writing, Communication, Process Documentation
Language: Proficient in English (native) and German

STUDENT AFFILIATIONS

Engineering Honors Program, Boulder, CO August 2024-Present
Undergraduate Enrichment Program Social Committee September 2024-Present
Theta Tau Professional Engineering Fraternity, Boulder, CO January 2025-Present
Integrated Design Engineering Student Advisory Board, Boulder, CO April 2025-Present