

Bryce Werner Kaese

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Education

Master of Science in Mechanical Engineering – University of Colorado Boulder – 2024

Cumulative GPA – 3.763

Bachelor of Science in Mechanical Engineering – University of Colorado Boulder – 2023

Cumulative GPA – 3.818

with Minor in Business – University of Colorado Boulder – 2023

Cumulative GPA – 3.740

Bachelor of Science in Applied Mathematics – University of Colorado Boulder – 2023

Cumulative GPA – 3.715

Academic Achievements: 8 Dean's List Semesters | Tau Beta Pi Engineering Honor Society | International Baccalaureate Full Diploma Recipient

Technical Skills

Software Skills: SOLIDWORKS CSWP – Mechanical Design (GD&T, Surfacing, FEA) | MATLAB | Engineering Equation Solver (EES) | Desmos

Hardware Skills: Mills | Lathes | Saws | Drills | FDM 3D Printing | Laser Cutting | Soldering | Die & Heat Presses | Solvent & Plasma Treating

General Work Experience

Design Center Colorado Support Engineer – University of Colorado Boulder

August 2024 – Present

- Assisting staff with administrative and logistical tasks and building scheduling to help run the Mechanical Engineering Senior Capstone course
- Advising student teams on subject matter including CAD/manufacturing, structural/component analysis, thermofluids, and systems/controls
- Managed 10 employees for 500+ man-hours to run the CAD & Fabrication course's fabrication project: single-cylinder air-powered engines
- Built a mock business jet cabin for psychological testing of the effects of replacing traditional windows with screens adding a skylight screen

Manufacturing Intern – Kelvin Thermal Technologies

June 2023 – August 2023

- Organized and implemented process flow improvements to streamline the production of thermal ground planes (TGP) for satellite applications
- Quickly learned the theory behind how TGPs work as well as how to safely navigate the variety of processes required to create TGPs at scale
- Troubleshoot every step of the manufacturing process to help research common manufacturing/assembly defects and how to avoid them at scale

System Dynamics/CAD & Fabrication/Heat Transfer Teaching Assistant – University of Colorado Boulder

FA '21 – SP '24

- Taught ~200 students over two semesters high-level signals and systems techniques including system identification, modeling and analysis
- Taught ~150 students over four semesters SOLIDWORKS techniques for complex modeling, assemblies, drawings, and GD&T as well as basic fabrication and rapid prototyping methods. Revamped course materials to be easier to understand, more cohesive, and up to date as of FA '23
- Taught ~75 students high-level heat transfer techniques including both theoretical and real-world applications to components and systems
- Ensured student comprehension and concept retention by leading labs, hosting office hours, promptly grading work, and providing feedback

Expo, Line Cook, Food Runner, Prep Cook, and Busser – Snooze, an A.M. Eatery

April 2021 – Present

- Executing at each step of the guest's experience to ensure satisfaction from preparing, cooking, plating, and serving food to greeting or cleaning

Engineering Projects Experience

CAD Engineer – Accu-Precision Capstone Project – University of Colorado Boulder

August 2022 – May 2023

- Designed a downhill mountain bike seat inspired by dirt bikes balancing human centered design with structural stability and overall functionality
- Collaborated with all stakeholders to quickly prototype, manufacture, test, and iterate the design in phases, incorporating DFM/DFA principles
- Delivered a fully functional high-resolution prototype that met or exceeded all specifications and could be scaled to mass manufacturing

Independent Study with Dr. Shalom Ruben – University of Colorado Boulder

August 2022 – December 2022

- Designed and built the frame/gantry of a painting robot as an engineering demonstration for outreach, engagement, and encouragement purposes
- Utilized SOLIDWORKS FEA to ensure that the frame of the robot would support the implementation of the CoreXY cartesian-motion gantry
- Researched appropriate software, sensors, controllers, and motors to ensure full operation of the robot when implemented in project extensions

CAD Engineer – Kinetic Sculpture Project – University of Colorado Boulder

January 2021 – May 2021

- Worked remotely from CA with the rest of my team in CO to design and build a functional kinetic sculpture during the COVID-19 pandemic
- Designed interlocking walls, physical constraints for the motor/bearing/cams subassembly, and overall aesthetics incorporating DFM techniques
- Facilitated brainstorming sessions and integrated and balanced the team's design ideas with the project's requirements and overall functionality

Leadership and Volunteer Service Experience

Engineering Fellow – University of Colorado Boulder

August 2022 – May 2024

- Provided supplemental assistance in the form of additional office hours and exam review sessions to the APPM Calculus for Engineers course series, as well as the MCEN Heat Transfer, Thermodynamics, and Statics courses, coordinating with professors and fellows to best serve needs

Academic Committee Co-Chair – Zeta Beta Tau Fraternity, BAΘ Chapter

August 2019 – May 2021

- Oversaw and helped maintain the academic standing of the fraternity by reserving study spaces and hosting open office hours for all brothers

Junior Counselor – SOKA All-Sports Camp / Assistant – Orange County Junior Guards

Summers 2012 – 2017

- Supervised groups of up to 20 campers (ages 7-15) encouraging positivity, perseverance, and sportsmanship amongst campers during all camp activities as they learned how to safely and responsibly play a wide variety of sports or learned the basics of lifeguarding and beach safety

Extracurricular Activities

Brother at Zeta Beta Tau Fraternity's BAΘ Chapter – 2018–2024

SMCHS Model United Nations 2 International Conferences – 2017 & 2018

SMbly Required Robotics FRC Team 5805 Regional Winners – 2018

SMCHS Symphony Orchestra Performance in Carnegie Hall – 2018