

Cole Rutkowski

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PERSONAL PROFILE

- Graduate Mechanical Engineering student with hands-on fabrication expertise and leadership experience in engineering projects. Passionate about design and manufacturing engineering. Interested in designing and testing innovative solutions in mechanical systems.

EDUCATION

MS in Mechanical Engineering, University of Colorado Boulder

GPA: 3.55

Graduation Date: May 2027

BS in Mechanical Engineering, University of Colorado Boulder

Graduation Date: May 2026

- *Recognitions:* 2026 Departmental Academic Engagement Award, MS Leadership and Engagement in Mechanical Engineering Scholarship Recipient
- *Certifications:* Certificate in Design Technologies and Food Engineering (CU Boulder), CSWA (SolidWorks)
- *Graduate Coursework:* Feedback Control, Design for Manufacturability, Aesthetics of Design

SKILLS

Fabrication: Lathes & Mills (200+hrs), MIG/TIG Welding (300+hrs), Brazing (50+hrs), Waterjet, 3D printing

Measurement Operations: Keyence CMM and MMS, Universal Testing Machine, High Speed Cameras

Software: SolidWorks (300+hrs), MasterCam, CAM+, Matlab, Python, C++, HTML, CSS, Microsoft Office, Excel

ENGINEERING EXPERIENCE

Baja SAE, Chassis and Manufacturing Engineer

August 2025 - May 2026

- Designed, fabricated, and competed a single-seat all-terrain sporting vehicle within 9-month project timeline.
- Designed chassis for off-road performance within regulations of 130-page rulebook; ex. accommodated 5th percentile female to 95th percentile male drivers, minimum driver 3" clearance around entire rollcage, and protective clearance and finger protection around driveshaft, axles, and exhaust.
- Designed packaging for drivetrain, suspension, and controls components within chassis.
- Utilized SolidWorks 3D sketches, reference geometry, global dimensions, and FEA simulations.
- Created manufacturing reports and presentations for client and director reviews.
- Managed manufacturing schedule for 15-person team and 8-week manufacturing timeline for 150+ machined components. Organized schedule to allow sufficient time for assembly and testing.
- Reviewed, approved, and organized all drawings for 300+ page drawing package. Maintained revision control.
- Coped and bent chassis tubes; fixtured and TIG welded tubes to drawing specifications; passed welding and driver clearance inspections.

Research Technician, Granular Flow Lab at University of Colorado Boulder

January 2025 - Present

- Designed, manufactured, and assembled projects for rheology experiments, including a 3x3x3m T-slot frame to mount 150kg motor above experiment. Design was approved by a structural engineer.
- Collaborated closely with engineering firm (Dynapec, Salt Lake City) on design requirements and specifications for rotating turn table.
- Streamlined design for manufacturability and cost reduction of photoelastic-particle casting mold.
- Produced 1m-diameter silicone gaskets for large rheometer experiment.

Machine Shop Assistant, Mechanical Engineering at University of Colorado Boulder

September 2024 - January 2025

- Taught students basic machining processes including lathes, mills, bandsaws, presses, and tool selection.
- Instructed manufacturing and assembly of air-powered wobbler engines for class projects.

Quality Control Intern, Trelleborg Sealing Solutions Denver

June 2024 - August 2024

- Created detailed documentation for quality control processes, improving testing efficiency.
- Designed and standardized procedures for torque, tensile strength, and hardness testing.
- Shadowed engineers on design and quality control procedures. Focused on relationship development with engineers and machinists.

Personal Project

August 2026 - December 2026

Design and build hardtail mountain bike frame

- Designed xc-style hardtail mountain bike for cross country, trail, and touring riding styles.
- Fabricated and welded thin-wall tubes using facilities and equipment available to students at CU.
- Collaborated with industry experts and custom frame builders throughout design cycle.

EXTRACURRICULARS

Distance Running, Cycling, Triathlon, Bicycle Touring

Trad Climbing, Mountaineering, Guitar