

# Cole Rutkowski

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## PERSONAL PROFILE

- Junior year Mechanical Engineering student with hands-on fabrication expertise and leadership experience in engineering projects. Passionate about designing and testing innovative solutions in mechanical systems and outdoor gear.

## EDUCATION

### **BS in Mechanical Engineering, University of Colorado Boulder**

Graduation Date: May 2026

GPA: 3.51

- Spanish Minor
- Extracurricular Courses: Welding, Machine Shop Safety and Technology, Operation of Universal Test Machines, ACE CNC Machining Training
- Relevant Coursework: Dynamics, Thermodynamics, Materials Science, Solid Mechanics, Fluid Mechanics, Heat Transfer

## SKILLS

Fabrication: Lathes, Mills, Waterjet, MIG/TIG Welding, Brazing, 3D printing

Measurement Operations: Keyence CMM and MMS, Universal Testing Machine, Ohaus Balance for Specific Gravity, Mark-10 Torque Gauge

Software: SolidWorks, Matlab, C++, HTML, CSS, Microsoft Office, Excel

## ENGINEERING EXPERIENCE

### **Class Project**

August 2024-December 2024

#### **Drill-Powered Tricycle**

- Designed, manufactured, and tested drill-powered tricycle for class competition, setting endurance competition record.
- Managed project lifecycle, including design, welding, machining, and testing of the frame and drivetrain.
- Welded frame components and machined adapters to optimize system performance.

### **Personal Project**

September 2023 - Present

#### **Making and Testing Climbing Nuts, Hexes, and Cams**

- Machined custom components with waterjet, lathe, and mill from Aluminum 6061-T6
- Researched mountaineer, homemade, and professionally-produced gear made between 1970 and present
- Studied and modeled old gear, hand-sketched and CAD modeled custom variations
- Tested aircraft-cable extensions in tension machines
- Fall tested new gear on real rock with increasingly large falls (30ft max)

## WORK EXPERIENCE

### **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.

### **Machine Shop Assistant, Idea Forge at University of Colorado Boulder**

October 2024 - Present

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

## LEADERSHIP EXPERIENCE

### **Mountain Guiding and Safety**

September 2022 - Present

- Teaching safety and mountain skills to novice climbers through the Alpine Club.
- Guiding new climbers on routes in multi pitch and alpine terrain.
- Instructing on safe anchors, rope systems, planning, preparation, and logistics.

## EXTRACURRICULARS

Distance Running and Triathlon

Trad Climbing and Mountaineering