

Cole Mutter

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EDUCATION

Colorado School of Mines, Golden, CO

Expected Graduation 2027

- *BS Computer Science, With Emphasis in Robotics and Intelligent Systems*
- *GPA: 3.65*
- *Awards: Provost Award Recipient, 2x 1st Place Hackathon Winner (BlasterHacks, HackCU)*
- *Relevant Coursework: Machine Learning, Software Engineering, Intro to Robotics, Data Structures, Algorithms*

TECHNICAL SKILLS

- *Computer Languages:* Python, Java, JavaScript, TypeScript, C, C++, C#, HTML, CSS, XML
- *Tools:* FastAPI, React, Airflow, Git, SQL, Supabase, PostgreSQL, Jira, Bitbucket, Jenkins
- *Skills:* Object Oriented Programming, Data Structures, Algorithms, Machine Learning, Artificial Intelligence

SOFTWARE EXPERIENCE

Voyant, Software Engineering Intern, Austin, TX,

Summer 2025, Summer 2026

- Implemented a retirement spending calculator that solves directly for sustainable spending, validated against Monte Carlo simulation to within 3% of the target confidence level
- Designed a retirement spending simulation, using the new calculator to demonstrate the difference between success probability and real retirement spending values to clients
- Implemented a new Monte Carlo algorithm using mean-reversion and volatility inertia for more accurate and robust predictions
- Designed and implemented objective based investing algorithm for clients to efficiently plan investments for future goals. Utilized Modern Portfolio Theory, Stochastic methods, and Monte Carlo Simulations
- Collaborated with software engineers in an Agile work environment with daily stand-ups for consistent feedback.
- Utilized common development workflows like Jira and Bitbucket (Atlassian Suite), effectively managing changes over time allowing for seamless collaboration among team members

RELEVANT PROJECTS

- UC Berkeley AI Hackathon Project: Soteria, An Automated Satellite Protection System Summer 2026
 - Built a FastAPI backend ingesting real-time NOAA space weather data through a redundant Apache Airflow pipeline deployed on Astronomer, with Supabase for fleet and event persistence
 - Paired Claude Agent SDK agents with deterministic Pydantic engines to score per-satellite risk from forecasted event windows and generate protective command runbooks based on NASA guidelines
 - React and Three.js frontend for satellite fleet management and orbital visualization; deployed on Render
- BlasterHacks Hackathon 1st Place Winner: Renewably, An Energy Optimization App Spring 2026
 - Python backend leveraging an ML model ensemble to predict and optimize new renewable energy sites
 - Wind and Solar ML models both report less than 5% MOE from real values; Modal used for ML endpoints
 - React and Vite front end with ArcGIS embedding for clean visuals; Viewable at renewably-1.onrender.com
- HackCU Hackathon 1st Place Winner: BrickMe, An Image to Lego Set Converter Winter 2026
 - Python backend with use of several 3D modeling packages, gets models from photos through Meshy API
 - React front end for visualizations and instructions
 - Designed a greedy algorithm with custom heuristics to guarantee buildable Lego structures
- PlaylistMaker Summer 2026
 - Trained word2vec-style song embeddings on the Spotify Million Playlist Dataset, treating each playlist as a sentence and each track as a token so co-occurring songs converge in vector space
 - Generates playlists from a seed track and target length via nearest-neighbor search across the learned embedding space
 - React frontend with FastAPI backend; deployed live at playlistmaker.fly.dev