

# Avi Aggarwal

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## EDUCATION

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**Colorado School of Mines**, Golden, CO

B.S. Mechanical Engineering

**May 2027**

**Honors and Awards:** Oredigger Leadership Community

**Allen High School**, Allen, TX

High School Diploma with STEM Endorsement

**May 2023**

**Honors and Awards:** Boeing STEM Scholar, NASA HUNCH Finalist, AP Scholar

## PROJECTS

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- **Arduino Lockbox** (MEGN200): Programmed and integrated a fingerprint sensor with an Arduino microcontroller to create a biometric security system; developed circuitry, wiring, and code logic for lock control. Also modeled overall housing for electrical components using SolidWorks.
- **Derby Car** (MEGN201): Produced detailed GD&T drawings and performed tolerance stack-up analysis; fabricated and assembled components; tested performance against design specifications and validated compliance.
- **Suitcase Redesign** (EDNS151): Applied CAD modeling and rapid prototyping to redesign a suitcase for improved usability; developed a mobile app in support of product functionality; contributed to design evaluation and iteration.
- **NASA Hunch Micro-G Dice Rolling**: Developed a magnetic dice-rolling blaster with NASA's HUNCH program, leading testing and prototyping efforts that earned Design Review Finalist recognition and selection for MIT's reduced-gravity aircraft.

## RELEVANT EXPERIENCE

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**Compressor Engineering Intern**, Honeywell-Sundyne, Arvada, CO

- Designed and demoed a new Compressor Test Database, improving usability and accuracy.
- Contributed to the EPR 1451 LO Vortex Study through test stand design, load calculations, pump sizing, and part sourcing.
- Built organized Inducer and Pump Case databases to streamline sizing and analysis requests.
- Created Item Masters in the part management system to support engineering workflows.
- Collaborated across teams to strengthen technical expertise in compressors, fluid mechanics, and machine design.

**Computer Science Teaching Assistant**, Colorado School of Mines, Golden, CO

- Works with professors to create grading rubrics for assignments
- Assists students with Python-based programming and code reviews
- Holds office hours where students can come and ask questions
- Helps write assignments for students and ensures that they target key topics

**Mines Activities Council**, Colorado School of Mines, Golden, CO

- E-Days Planning Committee
  - Organized vendors and booths for a carnival
  - Worked with a team of faculty and students to put together an event
- Movie Night Chair
  - Interviewed and joined the committee as 2024-2025 Movie Night Chair
  - Work with a movie licensing company to get permission to show movies on campus
  - Manage budget and work with a team to put on large events on campus
  - Organizes vendors for events and manages quotes
  - Created a new budget management system and assisted with bugs and questions

## ENGINEERING AND TECHNICAL SKILLS

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- **Technologies:** Solid Works, Microsoft Office, 3D Printing, Python, C++, Arduino
- **Certifications:** OSHA 30-Hour General Industry Safety and Health, Solid Edge Associate Level, CPR
- **Professional:** Machine Shop Experience, Problem Solving, Public Speaking, Management, Leadership

## ACTIVITIES

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- American Society of Mechanical Engineers (ASME)
- Society of Asian Scientists and Engineers (SASE)
- South Asian Student Association at Mines (SASA)