

# Utkarsh Mandavilli

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## EDUCATION

University of Colorado-Boulder: BS&MS in Electrical Engineering & Minor in Finance | Expected Undergraduate Degree in May 2027 and Master's Degree in May 2028

- ❖ Relevant Coursework: C & MATLAB Programming, Digital and Analog Electronics, Microelectronics, Embedded Systems, PCB Design, Electromagnetic Fields and Waves, Linear Systems, Power Electronics, Biomedical Device Design, Bioelectromagnetics, Management & Finance
  - ❖ Division 1 Athlete in Ultimate Frisbee: National Champion Runner-Up 2025
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## TECHNICAL SKILLS

- ❖ Design: Solidworks, CAM, Altium Designer
  - ❖ Fabrication: CNC, 3D Printing, Laser-Cutting, Lathe, Hand Tools, Power Tools
  - ❖ Electronics: Regular & Surface-Mount Soldering, Circuit Testing & Assembly, Microcontrollers, Oscilloscopes
  - ❖ Software: MS Office, MATLAB, C, LaTeX, Python, Verilog, SPICE, HTML, Git
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## ENGINEERING EXPERIENCE

### **NASA Colorado Space Grant Consortium: "CARMA"** (Present)

- ❖ Working on building and improving NASA STELLA spectrometers, a handheld instrumentation and data collection device, using Altium Designer, Solidworks and a Python IDE
- ❖ Designing the EVA Pod: A passive data collection device that measures various environmental metrics
  - Custom multi-layer PCBs with 10+ ICs and hundreds of circuit components in addition to housings
- ❖ Validating the STELLA for environmental research through intensive field and laboratory testing
- ❖ Working closely with a design team at NASA to help design new versions of the spectrometers
- ❖ Directing the development of a website that will integrate NASA LandSAT Data and STELLA data
  - Using HTML and PHP for building the website in conjunction with a Google Maps API
- ❖ Wrote and filmed a video tutorial series detailing the build process of the STELLA
- ❖ Spectrometers to be used by our team and other environmental researchers to assess the local plant life health of various regions in Rocky Mountain & Yellowstone National Parks

### **Digital and Analog Electronics Project: "Spidey-Sense"** (Fall 2023)

- ❖ Designed and Created functioning visual alerting system for hearing-impaired people
- ❖ Produced custom PCB in Altium Designer that amplified and converted signals from a microphone array and output it into a group of microcontrollers
- ❖ Developed enclosures using CAD and handled PCB surface-mount soldering in addition to regular soldering and assembly for LEDs, Resistors, Arduino, etc.

### **Robotics:** (Fall 2019 - Present)

- ❖ Headed a team that designed and built a winning BattleBot placing 3rd at the NRL Regional Championship
    - Used Solidworks and CAM to design and operate CNC mills and laser cutters to machine the chassis and various components for the drivetrain, weapon, and electrical housing
    - Planned and installed an electrical system that integrated weapons, sensors, motors and a microcontroller
  - ❖ Contributed to making several winning robots for the First Robotics Competition
    - Developed and fabricated the frame, drivetrain and various parts for different robots over 4 years
    - Led the integration of the robot's electrical and mechanical systems and conducted thorough testing
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## ADDITIONAL EXPERIENCE

### **Chef at Rosetta Hall** (Present)

### **Immigration Law Assistant at UR Immigration Services** (May 2024-August 2024)

### **Current CU Robotics Member and 4-year Member on Cherry Creek HS Robotics** (January 2020 – May 2023)