

# Calder Russell

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## EDUCATION

### Massachusetts Institute of Technology

*B.S. intended in Aeronautics & Astronautics and Mathematics*

Cambridge, MA

2026 – 2030

### Harvard University

*Non-Degree Coursework: Dual enroll during High school*

Cambridge, MA

2025 – 2026

- Courses: MATH 21B (Linear Algebra), STAT 110 (Probability), STAT 171 (Stochastic Processes)

### Cambridge Rindge and Latin

*High school*

Cambridge, MA

2022 – 2026

- GPA: 95.9 (unweighted)
- Relevant Coursework: Multivariable Calculus, AP BC Calculus, AP Physics C (Mechanics & E&M), AP Computer Science A, AP Statistics, AP Chemistry, American Sign Language (3 years)

## EXPERIENCE

### MIT CAVE Lab – Intern

*Massachusetts Institute of Technology*

Spring 2025 – Summer 2025

Cambridge, MA

- Built a Python/Django backend for an interactive modeling app used in lab demos and outreach
- Designed data pipelines enabling cross-session state sharing and simulation persistence

### Federation for Children with Special Needs – Volunteer Data Analyst

*FCSN*

Sep. 2024 – Present

Boston, MA

- Analyzed program data and produced visualizations used in successful grant applications
- Work contributed to over \$250K in awarded funding

## PROJECTS

### NASA Drop Tower | *Cad:Fusion 360, Onshape*

Oct. 2024 – May 2025

- Selected Top 20 nationally in an engineering design competition
- Designed CAD paddle-wheel mechanisms to operate under microgravity using capillary action
- Accepted for microgravity testing at NASA

### CubeSat | *Python, CAD, Raspberry Pi, Electrical Engineering*

Oct. 2024 – May 2025

- Designed a 1U CubeSat for space-based scientific research
- Led system design and presentation; awarded Best Design/Presentation

### ASL Translation Tool | *Python, PyTorch, MediaPipe*

Summer 2025

- Built a computer-vision pipeline to translate American Sign Language into text using hand-landmark extraction (MediaPipe)
- Trained and evaluated an RNN classifier for sign recognition using labeled gesture data
- Implemented real-time NLP post-processing to convert ASL grammatical structure into English word order

## EXTRACURRICULAR

### Drone Club – President

May 2025 – Present

- Led instruction in drone engineering and aerial photography
- Coordinated with school and city officials to film and livestream community events

### Debate & Model United Nations

May 2025 – Present

- Debate Club Leader; designed lesson plans and taught debate skills
- Plenary speaker at NHSMUN (3,000+ attendees); received NFL Degree with Distinction

## TECHNICAL SKILLS

**Languages:** Python, Java, JavaScript, HTML/CSS

**Frameworks:** FastAPI, Django, React, Tailwind

**Developer Tools:** Git, Docker, VS Code

**Libraries:** pandas, NumPy, Matplotlib, OpenCV, PyTorch, NetworkX, OSM, Manim