Calder Russell

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Education

Massachusetts Institute of Technology — Cambridge, MA
B.S. intended in Aeronautics & Astronautics and Mathematics — *2026 – 2030*

Harvard University — Cambridge, MA
Non-Degree Coursework: Dual enroll during High school — *2025 – 2026*

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

Cambridge Rindge and Latin — Cambridge, MA
High school — *2022 – 2026*

- GPA: 95.9 (unweighted)
- Relevant Coursework: Multi-variable 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 — Spring 2025 – Summer 2025
Massachusetts Institute of Technology — *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 — Sep. 2024 – Present
FCSN — *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: Java, Python, JavaScript, HTML/CSS
Frameworks: FastAPI, Django
Developer Tools: Git, Docker, VS Code
Libraries: pandas, NumPy, Matplotlib, Open CV, PyTorch, NetworkX, OSM