

Nixon Hanna (he/him)

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EDUCATION

Massachusetts Institute of Technology

Sep. 2024 – May 2028

B.S. in Physics and Mathematics

Cambridge, MA

- **GPA: 5.0/5.0**
- **Relevant Coursework:** Relativistic Quantum Field Theory, Quantum Physics I, II, and III, Relativity, Differential Geometry, Classical Mechanics II, Statistics, and Statistical Mechanics
- **Extracurriculars:**
 - Lecture Series Committee Chair: Oversee all aspects of running weekly and special movie screenings
 - MIT AI Alignment Organizer: Organize and lead various events relating to AI safety and AI policy
 - Climbing Team Vice-President: Plan fortnightly exec meetings and manage roster of team members

University of Nebraska—Lincoln

Jun. 2021 – May 2024

Visiting Student (Dual Enrollment)

Lincoln, NE

- **Relevant Coursework:** Multivariable Calculus, Linear Algebra, Abstract Algebra, Ordinary Differential Equations, Partial Differential Equations, Modern Physics, Electromagnetic Theory

WORK & RESEARCH EXPERIENCE

MIT Kavli Institute for Astrophysics and Space Research

Jun. 2025 – Jan. 2026

Undergraduate Researcher

Cambridge, MA

- First-authored a paper (submitted to ApJ) introducing a new figure of merit for gravitational lensing model fits and using strong lensing phenomena to estimate gravitational potential centers for clusters of galaxies
- Presented as a Remote Contributor at the 2025 Scaling-up Lensing Workshop at the University of Liège

Virtual Incision

Jul. 2021 – Aug. 2024

R&D Engineering Intern

Lincoln, NE

- Presented a company wide talk (~150 attendees) on Python and its effectiveness over other technologies
- Designed and deployed a Python toolkit enabling non-programmer engineers to effortlessly create robot control code and simulate kinematics from their desktops, now used by all departments for development and testing
- Headed various machine learning projects (e.g. surgery stage identification and autonomous suturing/surgery)
- Designed, simulated, and implemented a novel IMU pose estimation algorithm for a prototype surgical robot
- Conducted kinematic and workspace analyses and simulations of surgical robot for FDA certification
- Built a bootloader communication protocol for reflashing physically inaccessible control boards

TEACHING EXPERIENCE

MIT Talented Scholars Resource Room

Incoming Feb 2026

Undergraduate Facilitator

Cambridge, MA

- Host 4+ weekly one-on-one tutoring sessions for students taking introductory Electromagnetism courses
- Lead weekly problem-set support nights and 2 midterm review sessions and a final review session each semester

Lux Middle School

Sep. 2023 – May 2024

MATHCOUNTS Head Coach

Lincoln, NE

- Selected and coached a 12-member team from 50+ students through structured tryouts and 2+ weekly practices
- Planned and led training with custom problem sets, bi-weekly practices, and intensive pre-competition sessions
- Coached team to 1st place finishes at both regional and state competitions, with standout individual achievements: 3 of top 4 and 7 of top 10 at regionals, and 2 of top 4 and 6 of top 10 at state.

SKILLS & INTERESTS

- **Skills:** Python (~5,000 hrs), Data Analysis/Visualization, Machine Learning, C++, Public Speaking, Leadership
- **Interests:** Climbing, Movies, Reading, Blogging, Jazz, Soul, R&B, Physical Media, Stationery, History of Science