

Benjamin Bassett

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Education

Hillsdale College, BS in Physics and Mathematics, Minor in Computer Science 2023 — Present

- Currently enrolled as a full-time undergraduate student at [Hillsdale College](#).
- Pursuing well-rounded education in the liberal arts and sciences and cultivating academic excellence.
- Developing skills in advanced mathematics, physics, programming, research, and scientific computing.

Classical Conversations, High School 2011 — 2023

- Graduate of [Classical Conversations](#), a rigorous homeschool program built on the classical education model.
- Studied the liberal arts and sciences like debate, literature, philosophy, and mathematics ([Transcript](#)).
- Completed comprehensive curriculum and participated in Mock Trial, Science Fair, and [Senior Thesis](#).

Research Experience

Summer Researcher, Hillsdale College – Remote Summer 2024

- Conducted pulsar data research through Hillsdale's [LAUREATES](#) program, developing [processing software](#).
- Presented research at [NANOGrav](#)'s Fall 2024 Meeting to collaboration members.
- Developed and refined a novel analysis GUI based on feedback from astrophysicists.

Research Assistant, Hillsdale College – Hillsdale, MI Feb 2024 – June 2024

- Novel analysis of MyOne Dynabead movement using a [custom Python application](#).
- Calculation of magnetic moment through bulk processing of microscope recordings.
- Learned Matlab and Mathematica analysis, OpenCV, graphing, automation, and troubleshooting.

Research Assistant, NANOSTars – Hillsdale, MI 2023 — Present

- Reviewed, classified, and analyzed hundreds of reprocessed pulsar candidates from GBT and Parkes.
- Participated in the [D-LITE](#) radio telescope construction and solar eclipse observations.
- Attended inter-university [NANOSTars](#) telecons, discussing relevant physics and astronomy topics.

Teaching Experience

Teaching Assistant, Hillsdale College Summer 2024

- Assisted with physics lab setup and instruction at Hillsdale College's [Summer Science Camp](#).
- Conducted evening recitations, preparing materials to review content and addressing student questions.
- Served as a resident assistant, supporting students throughout the summer camp experience.

Private Tutor, Hillsdale College August 2024 — Present

- Tutor for Calculus I-III and most computer science courses, helping students understand and apply advanced concepts.

Publications

[Constraining solar emission radius at 42 MHz during the 2024 Total Solar Eclipse using a student-commissioned radio telescope](#) December 2024

Olivia Young, Timothy Dolch, ..., *Benjamin Bassett*, et. al.

The Astrophysical Journal

[Automating Pulsar Bowshock Discovery](#) October 2024

Benjamin Bassett, Timothy Dolch

Presentations

Automating Pulsar Bowshock Discovery

October 2024

Fall 2024 NANOGrav Conference

Presented novel research on automating the discovery of pulsar bowshocks as part of student presentations in front of the members of the NANOGrav collaboration at the Fall 2024 Conference.

Coursework

Physics: PHY-201 (Classical Mechanics), PHY-202 (Electricity and Magnetism, Thermodynamics), PHY-303 (Waves and Oscillations, Optics, Relativity), PHY-304 (Quantum Mechanics), Saxon Physics (Intro to Physics)

Mathematics: MTH-120 (Calculus I), MTH-220 (Calculus II), MTH-320 (Multivariable Calculus), MTH-310 (Linear Algebra), Saxon Math (Algebra, Geometry, Trigonometry, Pre-Calculus, Calculus)

Skills

Languages: English (Native), Latin (Intermediate), Spanish (Beginner)

Other: Technical Writing, Public Speaking, Podcasting, Video Editing, Media Coordination, A/V Operations

Awards

Hillsdale College Dean's List: 2023-Present

National Latin Exam: Maxima Cum Laude

National Merit Scholar: Commended

Lower Michigan Mathematics Competition: [3rd Place](#) (2 person team) out of 17 teams

Clubs and Organizations

Hillsdale College: Society of Physics Students, Math Competition Team, Swing Dance Club, C. S. Lewis Society, Shakespeare Club, Tower Players, NANOSTars, Chess Club