Abheek Dhawan

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Location: New Haven, CT

Education

- **Yale College** — New Haven, CT
  B.S. Computer Science & Astrophysics | GPA: 3.9 — *August 2024 - Present*
  Completed: *CPSC 223 Data Structures & Programming Techniques, ASTR 255 Research Methods in Astrophysics, PHYS 260 Intensive Introductory Physics, HUMS 108 Intro to the Occult Sciences, MATH 120 Calculus in Several Variables, ASTR 330 Scientific Computing in Astrophysics, CPSC 323 Introduction to Systems Programming, SPAN 070 Cultural Inquiries into Catalan Cultures*
  In Progress: *CPSC 4740: Computational Intelligence for Games, ASTR 3560 Astrostatistics and Data Mining, PHYS 4100: Classical Mechanics, MATH 2250: Linear Algebra, ENGL 1014*
- **Ladue Horton Watkins High School** — St. Louis, MO
  High School Diploma | ACT: 36 — *August 2020 - May 2024*

Experience

- **Yale Quantum Institute** — Hybrid
  Research Assistant (Full-time) — *June 2025 - August 2025*
  - **Quantum Computing Visualizations**: Developed interactive visualizations under Prof. Yongshan Ding to teach and demonstrate quantum computing concepts.
- **St. Louis Modern Chinese School** — On-site
  Programming Teacher (Part-time) — *August 2023 - May 2024*
  - **Programming Education**: Taught 50 students different programming topics weekly, from a text-based programming introduction to Python classes and web development as part of the Coding Academy St. Louis nonprofit.
- **Medicardia** — Remote
  Programmer (Part-time, Internship) — *September 2021 - September 2023*
  - **NLP Patient Report Processing**: Designed and implemented Natural Language Processing pipelines to extract and tag key patient information such as medications and demographics from clinical reports.
- **Summer Science Program** — On-site
  Researcher (Full-time, Internship) — *June 2023 - July 2023*
  - **Orbital Element Determination**: Captured asteroid images using the UNC-Chapel Hill Morehead Observatory and implemented the Method of Gauss in Python to derive orbital elements and model trajectories.

Projects

- **CourseTable**: Implemented full progressive web app (PWA) functionality, including offline caching and install prompts, for Yale's most popular unofficial course browsing platform used by over 95% of students.
- **Sonara**: Developed automated transcript classification and summarization system using Deepgram streaming and HuggingFace zero-shot models; project earned Runner-Up at the NYC ASA AI4Purpose Hackathon (2025).
- **Awesomescibo**: Created and maintained the most popular Science Bowl training Discord bot with over 2,000 peak users, featuring subject-targeted rounds, and a live, competitive scoreboard.
- **Wwise-Audio-Tools**: Built C++ toolset for reverse-engineering and decoding Wwise SoundBank files within the WolvenKit project, enabling mod developers to inspect and extract audio assets.
- **Raycaster**: Designed a basic 3D raycasting engine in Java to simulate early first-person rendering and collision logic, emphasizing computer graphics fundamentals.

Skills

- **Languages**: C, C++, Go, Python, TS/JS
- **Frameworks**: SpaCy, Next, Mongoose, Rebound, NumPy, Lenstronomy
- **Tools**: Docker, Git, JetBrains IDEs, Visual Studio Code, Google Suite, Microsoft Suite
- **Platforms**: Linux, macOS, Windows, Web, Arduino, Raspberry Pi, Digital Ocean
- **Academics**: Advanced Physics and Astrophysics, Advanced Calculus (Vector, Multivariable), Statistical Data Analysis, Working Proficiency in Spanish

Honors and Awards

- NYC ASA AI4Purpose Hackathon Runner-up - 2025
- National Merit Semifinalist - 2023
- 21 in US at Natl Astronomy Competition (29 intl) - 2023
- AATSP Bertie Green Junior Travel Award - 2023
- Nexus Mods verified mod author - 2022