JACOB MANDELBROT
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Link To Portfolio Website: https://jacobmandelbrot.github.io/portfolio/

Education

Harvard College — *Cambridge, Massachusetts* Expected Graduation Date: May 2026
Degree: Computer Science
Relevant Coursework: Creating Video Games, Designing Virtual Worlds, Computer Graphics, Designing K-12 Computer Science Learning Experiences
GPA: 3.67

Summary

I am a Harvard student studying Computer Science with a strong passion for making games. Although I have a demanding course schedule, I find time to devote to game development and improve my skills with Unreal Engine and Unity. My strengths as a game developer are creating complex and balanced enemy AI, building out player mechanics and abilities, and breaking down and solving difficult problems. At Harvard, I started my first professional journey into video game creation, working as part of a small indie studio alongside fellow students from various disciplines to develop and release a professional game. Through this experience, I have grown significantly as a developer, and it has deepened my passion for making games.

Skills

- Game Engines: Unreal, Unity
- Expert: C/C++, Python, C# , Java,
- Proficient: HTML, SQL, Javascript, Swift
- Version Control: Perforce, Github
- Misc: Unity VR development, OpenGL, 3D Modeling in Blender, Composing in FL studio, Art in p5.js

Experience

Harvard Indie Game Studio
CTO/Lead Programmer Nov 2023 - Present
- Recruit, train, and mentor the programming team while working closely with the art team (eight members total).
- Set the technical vision for the game projects, including choosing the right game engines, tools, and technologies to bring the creative vision to life.
- Establish and enforce coding standards, ensuring the codebase is maintainable, efficient, and bug-free.
- Created the backbone for all the major game systems and mechanics.
- Work on major aspects of the game such as player abilities and enemy behavior.

Harvard College Video Game Development Club:
Vice President May 2024 - Present
Game Developer Sep 2023 - May 2024
- Gain game development experience by helping manage multiple projects from concept to completion.
- Organize workshops and game jams.
- Enhance technical skills by using the newest game development tools and software.
- Learn to work in diverse teams of programmers, designers, storytellers, and musicians to develop games.

Massachusetts General Hospital:
Research Intern/Artificial Intelligence Programmer Jul 2023 - Jan 2024
- Developed machine learning model using medical data from multiple imaging modalities to segment tissue infarction.
- Created model using U-Net architecture that has a similar accuracy to manual lesions drawn by experts.
- Used advanced linear algebra libraries within MATLAB to process, partition, and train models on 3D medical imaging data

Code Ninjas
Game Development/Game Programming Tutor Jun 2020 - Dec 2021
- Coached students in designing and building their own games using the Code Ninjas engine. Role was integral to maintaining the quality of their work and a smooth advancement in their skills, transforming them into better game developers and programmers.
- Led summer classes with over 20 students, delving into specialized subjects like game development and python programming. During the classes, gave comprehensive lectures and created engaging additional lesson material to reinforce the students' knowledge and inspire their creativity.

Harvard Data Analytics Group:
Case Team Analyst Sep 2024 - Present
- Working on data science project for Fortune 500 company
- Conducting exploratory analysis on first-party data on cardholders and non-cardholders.
- Investigating the behavioral trends of cardholders and non-cardholders.
- Designing a stand-alone model to simulate the impact of hyper-targeted advertisement on credit card applications using various machine learning models.
- Building out a data-pipeline for this stand-alone model if time permits.

Harvard Undergraduate Machine Learning Organization:
Applied Projects Programmer Sep 2021 - May 2023
- Learned how to apply machine learning tools to multiple disciplines.
- Created a machine learning project with a small team and learned machine learning techniques.
- Developed website with a team that recommends courses to Harvard students using natural language processing.

Music Organizations:
Clarinetist Jan 2013 - Present
- Harvard Radcliffe Orchestra: oldest continuously active symphony orchestra in the United States, providing professional-quality performances to the Harvard and Cambridge community every year.
- Wisconsin Youth Symphony Orchestra: statewide musical organization, performing several concerts each season, doing outreach in Wisconsin communities encouraging students to learn classical music, and touring nationally or internationally approximately every other year.
- Interlochen Music Festival: intensive clarinet camp, studying with internationally renowned musicians and greatly improving clarinet playing and performing skills.