

## Link To Portfolio Website: <https://jacobmandelbrotdev.github.io>

### Education

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Harvard University — Cambridge, Massachusetts  
Degree: B.A. in Computer Science. GPA: 3.725.  
Relevant Coursework: Creating Video Games, Designing Virtual Worlds (XR/VR), Computer Graphics, Linear Algebra and Differential Equations.

Expected Graduation Date: May 2026

### Related Experience

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Imaginary Hazard Studios

*Lead Programmer*

Nov 2023 - Present

- Recruit, train, and mentor the programming team while working closely with the art team (ten members altogether).
- 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.

John Hopkins Applied Physics

*Software Engineering and Simulation/Modeling Intern*

June 2025 - Present

- Contributed to physics-based simulation and training systems developed in Unity.
- Designed and implemented internal tools, including a custom developer console and a node-based graph system for authoring workflows.
- Extended and modernized legacy systems by integrating AI-assisted functionality into existing pipelines.
- Collaborated within a large, cross-functional engineering team using agile workflows.

Harvard College Video Game Development Club:

*President*

Sep 2023 - Present

- Help manage multiple group projects from concept/prototyping to completion.
- Organize game jams and other club events.
- Teach Unity and Unreal engine tutorial workshops.
- Worked in diverse teams of programmers, designers, storytellers, and musicians.
- Enhanced technical skills by using the newest game development tools and software.

Code Ninjas

*Game Programming Tutor/Game Developer*

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 C#/C++ 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.

### Additional Experience

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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

Harvard Data Analytics Group:

*Case Team Analyst*

Sep 2024 - Dec 2024

- Work on data science project for Fortune 500 company
- Conduct exploratory analysis on first-party data.
- Design stand-alone models to simulate the impact of hyper-targeted advertisements on credit card applications using various machine learning models.
- Build out data-pipelines for models.

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.

### Skills

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- Game Engines: Unreal, Unity
- Expert: C/C++, Python, C#, Java,
- Proficient: HTML, SQL, Javascript, React
- Version Control: Perforce, Github
- Misc: Multiplayer Networking, VR/AR, OpenGL, Blender 3D Modeling, FL Studio, UI in Figma