Nathan Robbins

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Education

Brown University Sept. 2023 – May 2027

Bachelor of Science in Computer Science *GPA: 4.0*

Relevant Coursework: 2D Game Engines, Graphics, UI/UX Design, Data Structures and Algorithms, Linear Algebra

Experience

Teaching Assistant – Intro to Object-Oriented Programming Aug. 2025 – Present

Brown University

- Built course website using TypeScript + React, HTML & SCSS in collaboration with another TA.
- Leading labs and mini-lectures for groups of 30+ students; holding twice-weekly office hours on object-oriented programming.
- Responsible for grading 10 projects per week; critical analysis of students' design and code style.

Software Engineering Researcher/Intern Jan. 2024 – Present

Brown Dash (Sponsored by Adobe)

- Using OpenAI and Adobe Firefly APIs to create a generative layout creation tool for visual content and content imported through spreadsheets, CSVs. Cut manual layout effort from hours to minutes.
- Developed spreadsheet tool and integrated it into existing dashboard application, allowing users to consolidate metadata and perform operations on thousands of canvas items at once.
- Added modules to a million+ line codebase on the MERN tech stack using integration testing best practices and agile development with weekly meetings and sponsor demos.
- Led Spring 2025 onboarding for 6 contributors.

Database Management/Frontend Developer Apr. 2025 – Sept. 2025

FCast

- Used Dash for Python to create an interactive tool for data visualization. Designed UI and implemented graphing features using Plotly and Pandas. Improved plot render time by 50%.
- Designed a more extensible format for PostgreSQL databases to allow for a more robust forecasting pipeline.
- Used Cursor with agentic AI to help me conceptualize/implement frontend features.

Projects

Deck-Building Tower Defense Game | *Godot Engine, Git* Sept. 2024 – Present

- Implemented a lightweight ECS and specialized grid A* with dynamic obstacles for flexible enemy AI.
- Designed data-driven card/effect system (JSON + composable resources) supporting 30+ unique effects.
- Implemented upgrade composability with component mixins; supports 100s tower permutations without new code.
- Coordinated with 2 teammates using YouTrack and GitHub flow.

Brown/RISD Game Design | *Godot, Unity, Git* Sept. 2023 – Apr. 2025

- Collaborated with teams of 10-20 people for two semesters to create small games.
- Implemented timer system, enemy pathfinding, flexible physics-based collision logic for tetris-like shapes.
- Communicated with artist team to coordinate development of code and assets.

"Geometry Wars" Game | *Java, JavaFX* Nov. 2023 – Jan. 2024

- Developed custom algorithm for polygon detection from line drawings.

Technical Skills

Languages: Java, Python, C/C++, JavaScript/TypeScript, HTML/CSS, SQL
Frameworks: React, Node.js, Dash for Python, PostgreSQL
Developer Tools: Godot (GDScript), Git, Docker, VS Code, QTCreator, IntelliJ
Libraries: Pandas, Plotly