

## Jacob Pine

<http://github.com/jpinedev>

<https://jpinedev.com/>

[jpinedev@gmail.com](mailto:jpinedev@gmail.com)

978-505-4835 | Boston MA, USA

Availability: May 2024

## Education

**Northeastern University**, Khoury College of Computer Science

Fall 2019 – Spring 2024

*Candidate for Bachelor of Science in Computer Science and Game Development, May 2024*

GPA: 3.97/4.00, Dean's Scholarship

## Coursework

Building Game Engines

Programming in C++

Algorithms

Computer Graphics

Networks & Distributed Systems

Object-Oriented Design

Computer Systems

Software Development

HCI\*

## Skills

**Languages:**

C++, C#, Java, TypeScript

**Frameworks/Engines/Libraries:**

Unity, OpenGL, DX11, SDL2, .Net

**Tools:**

GIT, Perforce, Jira, Visual Studio

## Experience

**Electronic Arts, Maxis**, Client Systems Engineering Intern – The Sims 4

Summer 2023

- Improved player experience by resolving community-reported legacy issues in Create-A-Sim and Build/Buy modes.
- Systematically narrowed the problemspace to isolate bugs in the vast codebase.
- Collaborated with Producers and Designers to identify requirements and create long-term, scalable solutions.

**MassDigi**, Lead Game Programmer

Summer 2022 – Present

- Designed architecture of event queue messaging system to process cards and their effects.
- Divided requirements and designed interfaces to share amongst the programmers.
- Collaborated with Artists and Designers to deliver core features.
- Led code reviews to increase code clarity and update documentation.

**Beacon Interactive Systems**, Angular Development Intern

Summer 2020

- Created SSL certificate bypass to streamline QA setup and testing.
- Upgraded AngularJS web application to Angular 7.
- Developed backend API with .Net (dotNet).

## Projects

**Model Trains Simulator**, Game Development Capstone

Fall 2023 – Present

- Created custom engine with DirectX 11 media layer.
- Developed user tools for sculpting detailed terrain and designing track systems.
- Built model-builder system to procedurally construct models in real-time.

**Real-time Raytracer**, Graphics Programming

Spring 2023 – Summer 2023

- Developed calculations for CPU raytracing a scene of primitive objects.
- Designed OpenCL kernel for distributing per-pixel calculations across GPU cores.
- Implemented real-time reflections for static objects.

**MSPJ Game Engine**, Game Engine Development

Spring 2023

- Developed a top-down 2D game engine for creating GBA-era RPGs.
- Designed data-oriented Entity Component System and Physics Engine.
- Enabled Python scripting for C++-based engine by bundling into a Python library.

## Extracurriculars

**Northeastern University**, NEU Rocket League Club Team

Fall 2022 - Present