Jacob Pine

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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	Computer Graphics	Computer Systems
Programming in C++	Networks & Distributed Systems	Software Development
Game AI	Algorithms	Object-Oriented Design

Skills

Languages:	Frameworks/Engines/Libraries:	Tools:
C++, C#, Java, TypeScript	Unity, Unreal, OpenGL, DX11, .Net	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 – Fall 2022**

- 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**