

# Blake Shea

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## EDUCATION

### Clark University

August 2022 – Present

*Bachelor of Arts in Computer Science, Interactive Media*

*Worcester, MA*

- Relevant Coursework: Data Structures, Algorithms, AI for Games, Database Management and Systems Design, Web Development, HCI in the Arts, Automata Theory, Game Studio

## EXPERIENCE

### Software Engineer Intern - AI Systems and Backend

August 2024 – Present

*Avilaar, Inc.*

*Worcester, MA*

- Built a **custom AI pipeline with GPT-4o and LlamaIndex**, leveraging **MongoDB vector search** to deliver hyper-personalized learning experiences for 25+ concurrent users.
- Developed and deployed a **FastAPI backend in Docker containers on AWS EC2**, cutting user response times from 30 seconds to under one.
- Implemented a **real-time session manager with WebSockets**, handling dynamic user interactions and state synchronization.
- Created an Unreal Engine client application for users to speak with anthropomorphic AI companions in augmented reality

### Extended Reality Lab Intern

January 2024 – Present

*Clark University*

*Worcester, MA*

- Managed support for 30+ XR input devices (HTC Vive, Meta Quest, Hololens, Xsens Motion Capture).
- Provided technical support for VR projects in Unity and Unreal Engine.

### Undergraduate Teaching Assistant - Computer Science

August 2024 – December 2024

*Clark University*

*Worcester, MA*

- Instructed Python and core computer science concepts to 40+ students.
- Increased student performance by 40% through 1:1 mentorship and office hours.

### C# and Python Instructor

May 2024 – November 2024

*ID Tech*

*Cambridge, MA*

- Taught **Unity and C#** to 100+ students at MIT, achieving a 90% satisfaction rate.
- Guided teams in developing 20+ collaborative VR games.
- Transitioned to online tutoring for 10+ regular clients in Unity, C#, and Python.

## PROJECTS

Dungeons & Dragons Inventory Webapp — Python, Django, Docker, PostgreSQL

January 2024 – Present

- Built a Django-based inventory management system for DnD campaigns with live updates for 30 users.
- Integrated **PostgreSQL** for robust data handling and **Docker** for consistent deployment across platforms.

Discord ASCII Top-Down RPG — Python, Discord API, MySQL

September 2023 – January 2024

- Developed an innovative turn-based RPG using Discord's API and MySQL for persistent player data.
- Implemented a fully functional grid-based battle system with ASCII art and A star pathfinding enemies.

## TECHNICAL SKILLS

**Programming Languages:** Python, C#, Java, SQL (Postgres, MySQL), HTML/CSS

**Frameworks:** FastAPI, Django, LlamaIndex, Unity, VR/AR SDKs

**Tools:** Git, GitHub, Docker, VS Code, Visual Studio, Linux CLI, PlasticSCM, LlamaIndex, MongoDB, AWS EC2