

# Blake Shea

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## EDUCATION

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### Clark University

Dual Bachelor of Arts in Computer Science, Interactive Media

August 2022 – Current

Worcester, MA

## EXPERIENCE

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### AI Narrative System Server for UE5 Client App

Avilaar, Inc.

August 2024 – Current

Worcester, MA

- Engineered a personalized narrative interaction system utilizing Python and MongoDB vector search, integrating GPT4o and LlamaIndex to achieve enhanced instructional experiences for 5 concurrent users in an immersive trial learning environment
- Implemented an optimized layout for deploying the system as a FastAPI app within Docker containers on AWS EC2, streamlining communication protocols that cut average user response time from 30 seconds down to less than one

### Extended Reality Lab Assistant

Clark University

January 2024 – Current

Worcester MA

- Managed support for over 30 alternative input devices including HTC Vive, Meta Quest Series, Microsoft Hololens, KatVR treadmill, and Xsens Motion Capture, increasing availability to students by 300%
- Collaborated with 3 departments to hold talks and presentations on the intersections of VR within gaming, health, and education

### Undergraduate Teaching Assistant

Clark University

August 2024 – December 2024

Worcester MA

- Facilitated instruction of Python and computer science principles to over 40 students
- Conducted regular office hours, mentoring students to achieve a 40% increase to assignment grades for regular attendees

### UnityVR and Python Instructor

ID Tech: MIT Campus

May 2024 – November 2024

Cambridge, MA

- Delivered immersive lessons in Unity and C# to over 100 K-12 students at MIT, fostering a collaborative learning environment that resulted in a 90% student satisfaction rate based on course evaluations
- Orchestrated team-based projects, driving completion of over 30 collaborative virtual reality games
- Transitioned in-person lessons to an online format, enhancing student engagement throughout the school year to further students' development in Unity3D, C#, and Python

### Isometric Narrative Game

Studio Blue Jay

January 2024 – June 2024

Worcester, MA

- Designed enemy AI agent state machine controllers to provide challenge and engagement to players for top down isometric game developed in Unity2D
- Created custom A\* path request service to split navigation compute time across frames, increasing FPS from 30 to 200+ on modern devices
- Constructed branching narrative design system to enable 5+ paths through conversation and story events

## PROJECTS

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### Discord ASCII Top-Down RPG | Python, Discord API, MySQL

September 2023 – January 2024

- Developed an innovative turn-based RPG accessible to Discord users using Discord's Bot API outputting ASCII strings to represent players, enemies, and walls within a 10x10 grid
- Engineered and implemented CRUD operations to a MySQL database to store user, inventory, and map data of 43 active players

## TECHNICAL SKILLS

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

**Frameworks:** Unity, FastAPI, Django, Tkinter

**Tools:** Git, Github, Docker, MongoDB Atlas, PlasticSCM, VS Code, Visual Studio