Matthew Holzer

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https://matthew0314.github.io/Personal-Portfolio

EDUCATION

The College of New Jersey (TCNJ) **September 2022 – May 2026**

- Bachelor's of Science, Computer Science; Minor, Digital and Creative Technology
- GPA: 3.733/4.0 | Dean's List: Fall 2022, Spring 2023, Spring 2024, Fall 2024, Spring 2025

SKILLS

Programming Languages: C, C++, C#, Java, Python, Ruby, HTML, CSS, JavaScript, MATLAB, SQL

Toolset: Unreal Engine, Unity Engine, GitHub, Blender, Sony Vegas, Linux, Rokoko, Microsoft Office

Concepts Learned: Object-Oriented Programming, Computer Architecture, Operating Systems, Data Structures and Algorithms, Linear Algebra, Game Development, Virtual Reality Development, Motion Capture, Database Systems

EXPERIENCE

Undergraduate Virtual Reality Research Assistant, TCNJ *Ewing, NJ* **Jan 2024 – May 2025**

- Develop and implement a Virtual Reality simulation using C# and Unity to study ethical decision-making, focusing on the Trolley Problem scenario

Computer Science Peer Mentor, TCNJ *Ewing, NJ* **August 2024 – Present**

- Tutoring students in Java, offering one-on-one guidance to build their understanding of key programming concepts

PROJECTS

Where The Moon Meets The Sun **December 2023 – Present**

- Developed a tactical RPG in Unity featuring grid-based combat and diverse map objectives inspired by Fire Emblem and Final Fantasy Tactics
- Built core gameplay systems, including unit movement algorithms, attack execution, AI behaviors, and a character/item database, while designing a tutorial level that improved players understanding of game mechanics.

RatKyll and Hyde **January 2025 - May 2025**

- Developed a Unity-based local couch co-op game where two rats compete and cooperate in a chaotic restaurant setting, engaging players by implementing resource collection, hazards, and scripted events.
- Designed dynamic multiplayer mechanics that blend competition and cooperation, increasing replayability and player engagement through adaptive challenges and environmental interactions.

CPR Training Simulation in Virtual Reality **March 2025 - May 2025**

- Created a VR-based CPR training simulator in Unity with a team of 4, improving training realism and engagement through physics-based interactions, haptic feedback, and immersive scenarios.
- Incorporated real-time emergency management and performance analysis to better prepare users for CPR certification, enhancing knowledge retention and practical skill application.

Nose-Tracking Drawing Application **December 2024**

- Developed a Python and Pygame-based drawing program that allowed users to create art using only nose movements, leveraging Google MediaPipe for facial tracking to support accessibility and alternative input methods.
- Collaborated in a team of 4 to design and implement the system, broadening usability for individuals with limited hand mobility and demonstrating innovative approaches to human-computer interaction.

ACTIVITIES/LEADERSHIP

Kappa Theta Pi Professional Technology Fraternity *President* **October 2023 - Present**

- Responsible for presiding over organizational meetings and overseeing all major aspects of the organization

Boy Scouts *Eagle Scout* **2012 - 2021**

- Led the successful execution of an Eagle Project which enhanced the facilities for the Community Food Bank

Upsilon Pi Epsilon *General Member* **April 2025 – Present**

Association for Computing Machinery (ACM) *Outreach Chair* **September 2023 - Present**

Diversity and Inclusion Group in Tech for All (DIGIT.all) *General Member* **September 2023 – Present**