

Matthew Mabrey

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Skills

Operating Systems: Windows, Linux

Back End Languages: C, C++, C#, Python, Lua, Java, PHP, SQL

Front End Languages: HTML, CSS, JavaScript, TypeScript, JQuery

Tools, Engines, Frameworks, & Libraries: Unity, Unreal, Photon, Blender, Photoshop, Angular, Ionic

Education

The College of New Jersey (TCNJ)

Expected Dec. 2021

Bachelors of Science, Computer Science

- **Cumulative GPA:** 4.0/4.0
- **Dean's List:** 7/7 Semesters
- **Honors:** Mu Alpha Theta Mathematics Honor Society
- **Clubs & Activities:** TCNJ's Game Design Club and Philanthropy Chair of Alpha Chi Rho Collegiate Fraternity
- **Relevant Courses:** Data Structures, Algorithms, Artificial Intelligence, Computer Networking, Web Design, Computer Architecture, Operating Systems, Calculus II, Statistical Inference, 3D Game Development, Game Design

Projects

Demolition Derby Game

Jun. 2019 to Aug. 2020

C# | Unity Engine, Microsoft Visual Studio, Photon, Blender

- Independently created a fully functional 3D multiplayer video game with the Unity Engine.
- Utilized object-synchronization and network events to synchronize multiple clients in the game.
- Experimented with game mechanics, physics, level design, and VFX to develop a competitive last-man-standing car game.

AI Game Solving Agent

Mar. to May 2020

Python | PyCharm, Numpy, Pygame, Python Arcade Library

- Used Python to create a rational game solving agent for a 2D retro arcade game.
- Designed the agent to avoid obstacles and adversaries while collecting targets in as little time as possible.
- Engineered the only agent in the class that completed all 10 levels without dying and achieved the only near-optimal score.

9 Circles Game Demo

Feb. to May 2020

C# | Unity Engine, Microsoft Visual Studio, Blender

- Lead a small team consisting of a two 3D artists and a musician to create a rogue-like video game.
- Responsible for all scripts, shaders, and spell effects needed, as well as helping with game design, animation, and level design.
- Worked with technologies such as procedural animation and AI enemy navigation in a 3D environment.

Arduino RepairMan

Jan. 2020

C++ | Arduino

- Created a physical game for the Global Game Jam 2020 game design hackathon in C++.
- Worked with an Arduino and several I/O devices.
- Designed puzzles with varying instructions and time constraints.

Experience

Green TCNJ Environmental App

Aug. 2020 to Present

Web App Developer

JavaScript, Typescript, HTML, CSS, PHP, SQL | Ionic, Angular, MySQL, MariaDB, Apache

- Creating a cross platform mobile application for The College of New Jersey's environmental and recycling initiatives.
- Implementing the back-end and associated functionality needed for recycling material guidelines, environmental events, and relevant news.
- Assisting my team to build the front end mobile application and admin portal to display and manage database information.

Device Security

Sep. to Dec. 2018

Undergraduate Student Research

- Researched security flaws in current mobile device technology.
- Compared malware and virus vulnerabilities of popular mobile device operating systems.
- Assessed the mobile device security options currently available to consumers.