Matthew Mabrey

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Experience

Green TCNJ Environmental App *Aug. 2020 to Present*
Full Stack Web App Developer
JavaScript, 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 database and associated functionality needed for recycling material guidelines, environmental events, and relevant news.
- Building the front end mobile application and web browser 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.
- Analyzed malware and virus vulnerabilities of popular mobile device operating systems.
- Assessed the mobile device security options currently available to consumers.

Education

The College of New Jersey (TCNJ) *Expected Dec. 2021*
Bachelors of Science, Computer Science
- **Cumulative GPA:** 4.0/4.0
- **Dean's List:** 6/6 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, Networking, Web Design, Computer Architecture, Operating Systems, Calculus II, Statistical Inference, Game Design

Projects

Demolition Derby Game *Jun. 2019 to Aug. 2020*
C# | Unity Engine, Microsoft Visual Studio, Blender
- Created a fully functional independent 3D multiplayer video game with the Unity Engine.
- Utilized a networking framework to synchronize multiple clients and develop a competitive last-man-standing car game.
- Implemented abilities, particle effects, and shaders to create a unique and entertaining gameplay loop.

AI Game Solving Agent *Mar. to May 2020*
Python | PyCharm, Numpy, Pygame, Python Arcade Library
- Used Python to create a rational game solving agent that successfully completes 10 stages of an arcade game for The College of New Jersey's Artificial Intelligence course final project.
- Designed the agent to avoid obstacles and adversaries while maximizing its score through the collection of targets in as little time as possible.

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 3D artificial intelligence enemy navigation.

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.

Skills

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

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

Tools, Libraries, Frameworks, & Runtimes: Unity Engine, Unreal Engine, Blender, Photoshop, Angular, Ionic