Matthew Mabrey

856-425-4084 | mattmabrey1@gmail.com | mattmabrey1.github.io | linkedin.com/in/matthewmabrey

Skills

Operating Systems: Windows, Linux

Programming Languages: C, C++, C#, Python, Lua, Java, PHP, SQL, 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:** 8/8 Semesters
- **Honors:** TCNJ Computer Science Award, UPE Computing Honor Society, and MAT Mathematics Honor Society
- **Clubs & Activities:** TCNJ's Game Design Club and Scholarship Chair of Alpha Chi Rho Collegiate Fraternity
- **Relevant Courses:** Software Engineering, Data Structures, Analysis of Algorithms, Artificial Intelligence, Theory of Computation, Computer Networking, Computer Architecture, Operating Systems, Calculus II, 3D Game Development, Game Design

Experience

World of Warcraft *May 2021 to August 2021*
Software Engineer Intern
C# | .NET 5 Framework, Microsoft Entity Framework, Grafana

- Utilized bots to simulate players and help automate game content testing.
- Developed AI logic to allow bots to prioritize and complete in-game objectives.
- Created tests using bots to generate reward acquisition data for upcoming content.

The Level Ancestor Problem *Feb. 2021 to Present*
Undergraduate Student Research
C | GCC

- Implemented several proposed solutions to the static level ancestor problem in graph theory and assessed their complexities.
- Researching new solutions to the dynamic version of the level ancestor problem.

Green TCNJ Environmental App *Aug. 2020 to May 2021*
Web App Developer
JavaScript, Typescript, HTML, CSS, PHP, SQL | Ionic, Angular, MySQL, MariaDB, Apache

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

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 navigation in a 3D environment.