

# Matthew Mabrey

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## Skills

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**Programming Languages:** C#, C++, C, Python, Java, Groovy, Lua, PHP, SQL, HTML, CSS, JavaScript, TypeScript

**Tools, Frameworks, & Engines:** .NET, Jenkins, Github Actions, Docker, Artifactory, Git, Subversion, WPF, Unity, Unreal

**Expertise:** Artificial Intelligence, Automation, Continuous Integration, Game Development, Asynchronous Programming

## Experience

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### World of Warcraft • Blizzard

*Jan. 2022 - Present*

Software Engineer, Mar. 2023

Associate Software Engineer, Jan. 2022

*C#, C++, Java, SQL | .NET Framework, Microsoft Entity Framework, Jenkins, Grafana*

- Implemented artificial intelligence for headless clients to test complex game features & systems using realistic player behavior.
- Developed, coordinated, and executed large scale automated testing to validate client & server performance.
- Enhanced Continuous Integration systems to improve reporting, testing, and build stability.
- Automated internal workflows to improve productivity and performance analysis.
- Doubled the system & process documentation on my team to assist in onboarding several new engineers.
- Architected data schemas and data access layers to store and automate the validation of game data.
- Championed increased testing across the team by automating test suites and improving reliability & usability of test tools.
- Awarded the highest, "Game Changer", performance review for contributions during 2022.

### World of Warcraft • Blizzard

*May - Aug. 2021*

Software Engineer Intern

*C#, SQL | .NET Framework, Microsoft Entity Framework, Grafana*

- Implemented artificial intelligence to enable headless client game agents to prioritize and complete in-game objectives.
- Created automated regression tests to verify upcoming game content rewards.
- Designed a data schema to store & visualize large amounts of game data on a Grafana dashboard to help automate QA testing.

### Green TCNJ Environmental App

*Aug. 2020 - May 2021*

Web App Developer

*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 guidelines, environmental events, and relevant news.
- Assisted my team in building the front-end mobile application and admin portal to display and manage database information.

## Education

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### The College of New Jersey (TCNJ)

*Dec. 2021*

Bachelors of Science, Computer Science

- **Cumulative GPA:** 4.0/4.0
- **Honors:** Summa Cum Laude, TCNJ Computer Science Award, UPE Computing Honor Society, Dean's List All Semesters

## Projects

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### AI Game Solving Agent

*Mar. - May 2020*

*Python | NumPy, PyGame, Python Arcade Library, PyCharm*

- 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 course to complete all 10 levels without losing any lives and achieving a near-optimal score.

### Demolition Derby Game

*Jun. 2019 - Aug. 2020*

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

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