Maxim Petrov

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EDUCATION

CUNY Hunter College | Macaulay Honors College   Expected May 2026

- *Bachelor of Arts in Computer Science*, GPA: 3.83/4.00
- **Coursework:** Data Structures and Algorithms, Software Design and Analysis, Linear Algebra, Computer Architecture

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SKILLS

- **Programming Languages:** C++, C#, Python, GDscript, HTML, CSS, JavaScript
- **Technologies:** Unreal Engine, Unity, Godot, Github, Microsoft Visual Studio, XCode, Idle, Hashcat

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EXPERIENCE

Studio Aspen | *Gameplay Programmer* | **Repository**   October 2024 - Present

- Collaborated as a programmer to a multidisciplinary team of 94 programmers, designers, and artists to develop a game in Unity/C#.
- Analyzed and optimized a pre-existing codebase, enhancing performance by identifying and refactoring key inefficiencies.
- Applied Agile methodology, participating in weekly meetings/scrum ceremonies, and used GitHub for version control.

Air Force Research Laboratory Information Directorate | *Modeling and Simulation Intern*   July 2024 - August 2024

- Collaborated with researchers to create a 2D/3D natural disaster damage assessment tool.
- Programmed and trained a machine learning model using Python to identify changes in 2D landscapes.
- Developed a 3D visualization tool using Godot that combines Google Maps API imagery with elevation data.

Goldman Sachs Software Engineering Virtual Experience Program on Forage   July 2024

- Completed a job simulation as a Goldman Sachs governance analyst responsible for assessing IT security.
- Identified that the company was using an outdated password hashing algorithm by cracking passwords using Hashcat.

Best Care Inc. / HSM Personal Care Corp. | *Home Care Aid*   October 2022 - Present

- Established effective communication with a non-responsive patient to ensure 100% delivery of essential care and support.
- Administered essential daily medication to a patient, taking on the crucial responsibility of ensuring the patient's well-being when they were unable to do so independently.
- Adapted to the patient's environment, resulting in a prompt and efficient delivery of assistance.

Focus AV | *AV Technician*   June 2022 - Present

- Collaborated with teams during social gatherings and events to deliver adequate audio/visual experiences.
- Demonstrated adaptability to new technologies, mastering the operation of speakers, mixers, etc.

Best Choice Pharmacy | *Delivery Service*   July 2020 - September 2021

- Utilized navigational systems and other tools to optimize delivery processes, resulting in a 100% on-time delivery for all shipments.
- Conducted comprehensive training sessions for new employees, setting clear job expectations to undertake their roles effectively.

PROJECTS

Gameplay Programmer / Designer | 2D Dungeon Crawler | Unity | [Repository](#)   September 2024 - December 2024

- Implemented a procedural generation algorithm to dynamically create unique and replayable level layouts.
- Utilized Unity's object pooling system to optimize memory usage and performance by managing high volumes of game objects.
- Conducted performance profiling and debugging to ensure stability and smooth frame rates across diverse scenarios.
- Designed and balanced a versatile combat system featuring a variety of player tools, incorporating playtester feedback to ensure fairness and engagement across all options.

Recreating Key Features of Git Version Control (C++) | [Repository](#)   August 2024

- Sharpened C++ skills by recreating core Git commands: 'init', 'cat-file', 'hash-object', 'ls-tree', 'write-tree', 'commit-tree'.
- Implemented Git's file storage and retrieval with SHA-1 hashing, zlib compression, and object parsing.
- Developed a deep understanding of Git objects including trees, blobs, and commits to accurately implement each command.

Gameplay Programmer | 3D Obstacle Course Game | Unreal Engine 5   July 2024

- Created a 3D obstacle course game using Unreal Engine 5 and C++.

Gameplay Programmer | 3D Sandbox Physics Game | Unreal Engine 5   July 2024

- Created a sandbox game using Unreal Engine 5 with a focus on 3D object physics within the engine.

Gameplay Programmer / Designer | 2D Platformer Game | Unreal Engine 5 | [Repository](#)   June 2024 - July 2024

- Implemented a dynamic camera system that isolates player encounters, ensuring optimal framing and focus during gameplay.
- Used line trace methods to create in game systems such as wall sliding/jumping.
- Utilized principles of object oriented programming to create classes that streamline the development of game actors.

Gameplay Programmer | Pong | [Repository](#)   June 2024

- Used C++ to create a Pong game, implementing core mechanics like collision detection, boundary handling, and basic AI.
- Bypassed typical game engine abstractions to gain a deeper understanding of game physics, state management, and input handling.

Gameplay Programmer / Designer | 3D Retro FPS Game | Unreal Engine 5 | [Repository](#)   May 2024 - June 2024

- Created dynamic enemy AI with pathing for a flat 3D environment using behavior trees.
- Utilized principles of vector math to design an 8 directional sprite system for enemies.
- Created core FPS mechanics, including hit scan detection, using line trace for real-time combat accuracy.

Gameplay Programmer / Designer | 2D Hack and Slash Game | Godot | [Repository](#)   September 2023 - October 2023

- Developed AI for enemies to navigate 2D terrain effectively and recognize traversable paths towards the player.
- Created a dynamic combat system, a tutorial, level layouts with diverse platforming obstacles, checkpoints to save player progress, and dynamic enemy move sets.
- Incorporated playtester feedback to refine and enhance game mechanics, ensuring a player-centric experience.

Gameplay Programmer / Designer | 2D Retro Platformer Game | Godot | [Repository](#)   July 2023 - August 2023

- Managed a team of 2 art/music directors and incorporated playtester feedback to refine game mechanics.
- Optimized player engagement and comprehension using game design principles and UI/UX elements.
- Conducted testing protocols such as unit tests to ensure a bug-free user experience.