

Changhwi Park

Software Engineer

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Portfolio & Blog <https://objectorientedlife.github.io/>

GitHub <https://github.com/ObjectOrientedLife>

Education

Seoul National University

2015 – 2022

- B.S. in Computer Science
- B.A. in Geography

Technical Skills

Programming Languages C++, C#, C, Shaders(HLSL/GLSL), Python

Game Engines Unity, Unreal Engine 4

Graphic APIs Vulkan, OpenGL

GUI Libraries Qt

IDEs Visual Studio, PyCharm

DBMSs MSSQL

3D Modeling Tools Blender, ZBrush, Substance Painter

Career

NEXON KOREA, Global MapleStory Team
Gameplay & Engine Programmer

August 2022 – September 2023

Responsibilities

- Implemented and integrated core gameplay features, both on the client side and the server side, ranging from layer z-ordering and skill system to the billing server.
- Cooperated with other programmers, designers, QA engineers, and overseas publishers to ensure successful game development and live service processes of MapleStory which possesses more than 100 million players worldwide and whose lifetime profit exceeded 4 billion dollars.

Tasks

- Contributed to appealing to a large number of players by designing and programming UI, server-side logic, and stored procedures for seasonal in-game events.
- Presented players with a seamless gameplay experience by debugging the extensive codebase to identify the root causes of the bugs reported by QA engineers, and subsequently rectify them.
- Addressed and resolved concurrency issues(deadlock and data race) on servers by analyzing crash dumps and Visual Studio parallel stack.
- Prevented the possibility of abuse by implementing robust security measures between packet transfers on the billing server.
- Improved metadata collection including the logging system to boost productivity and streamline the measurement of user statistics.
- Wrote SQL queries for aggregating statistics, monitoring user states, and compensating users with items.
- Delivered a seminar to update team members on the findings in in-game features about character movement and string encoding issues.

Awards

- Best Team Award

February 2023

- Responsibilities
- Developed an AR- and AI-based livestreaming system using Unity & Barracuda, OpenPose, and VideoPose3D.
- Tasks
- Studied the OpenPose and VideoPose3D research papers and discussed with other researchers, subsequently translating the concepts into C# code within the Unity environment.
 - Developed virtual character movement pipeline including inference, handling the result from the neural network, and demonstration with arbitrary characters.
 - Overcame the limitations of building augmented reality by devising and implementing an ingenious vanishing-point-based plane detection interface.

Projects

Indie Game Project 'Peninsula' Team Lead

March 2020 – present

- Responsibilities
- Design gameplay and visual concepts 3D top-view RTS game project set in the Korean war.
 - Construct highly optimized gameplay components using Unity and C#.
 - Create 3D models that visually enrich the levels.
- Tasks
- Create design specifications for in-game features to facilitate communication with team members.
 - Develop versatile and reusable code that designers can customize without the altering the underlying codebase.
 - Design structures for the client and server sides using Mirror framework to ensure the cheat-resistant and smooth gameplay experience.
 - Research and implement high-performance compute-shader-based field of view system suitable for large-scale realtime strategy games.
 - Improve visual effects by writing diverse shaders applicable to each physical material.
 - Model and texture 3D objects with Blender, ZBrush, and Substance Painter.
 - Rig, skin, and animate humanoid, subsequently adjusting it to interact with other objects in the game.