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   August 2022 – September 2023
Gameplay & Engine Programmer

Responsibilities

- Implement and integrate core gameplay features, both on the client side and the server side, ranging from layer z-ordering and skill system to the billing server.
- Cooperate 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

- Contribute to appealing to a large number of players by designing and programming UI, server-side logic, and stored procedures for seasonal in-game events.
- Present 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.
- Address and resolve concurrency issues(deadlock and data race) on servers by analyzing crash dumps and Visual Studio parallel stack.
- Prevent the possibility of abuse by implementing robust security measures between packet transfers on the billing server.
- Improve metadata collection including the logging system to boost productivity and streamline the measurement of user statistics.
- Write SQL queries for aggregating statistics, monitoring user states, and compensating users with items.
- Deliver a seminar to update team members on the findings in in-game features about character movement and string encoding issues.

Awards
                                                              February 2023
- Best Team Award

NCSOFT, Human Pose Estimation Team, Vision AI Lab   July 2021 — August 2021
Intern AI Engineer

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'**   March 2020 — present
Team Lead

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.