Gerui Chen

Harry Chen | me@ku6.moe | https://ku6.moe | github.com/KuromeSama6
Open to International Work, Based in New York

Education

New York University — New York, NY
Bachelor of Fine Arts in Game Design — *Aug. 2025 – May 2029*

Experience

Part-time Gameplay Developer — July 2025 – Present
Ningbo ESH Network Technology Co. Ltd. — *Ningbo, China (Remote)*

- Developed gameplay features using Java for a large Minecraft network running on Nukkit.
- Addressed and fixed gameplay issues reported by the customer support team.
- Explored various ways of cheat detection in a multiplayer environment in Minecraft.

Projects

Super Smash Rhodes | *Unity, C#, Spine 2D, Rust, C++, Java, Protobuf* — Janurary 2025 – Present

- Developed a 3D fighting game using Unity, a fan-game based on *Arknights*.
- Remixed and designed charatcters and animations using Spine 2D based off of existing *Arknights* assets.
- Designed a fully deterministic, rollback ready fighting engine capable of serializing full game state and reproducing past game states through input replay.
- Implemented data-driven character states using Protobuf for data serialization and content delivery. Developed a corresponding data packing tool in Rust to compile JSON source data into Protobuf format.
- Implemented a custom, compiled, VM-based scripting language (*Fight750 State Script*) for defining character behavior beyond the capability of data-driven states.
- Implemented a register-based virtual machine in Unity for executing the custom scripting language.
- Implemented room-based multiplayer, session management, and P2P support with a custom protocol via TCP, using Netty and Java as a backend.
- Implemented networked play and deterministic rollback netcode with GGPO (originally in C++) and Unity C# bindings.

Fight750 State Script | *Rust, C#* — September 2026 – Present

- Developed a custom, compiled, VM-based scripting language inspired by Assembly, specifically designed for defining character behavior in fighting games.
- Developed a compiler in Rust capable of parsing and linking multiple Fight750 source code files into a single output file of a custom bytecode format.
- Implemented a stack-based virtual machine in C# for executing the custom bytecode generated by the compiler, with support for loading multiple bytecode modules simultaneously and resolving inter-module symbols at runtime.
- Implemented virtual stack and heap memory management within the virtual machine with an efficient algorithm via Unity's native memory arrays, allowing for convenient state serialization.

YukiMessenger | *Java, Bukkit, Bytebuddy, WebSockets* — October 2023 – Present

- Developed a Minecraft plugins that allows for easy communication between server instances in a network.
- Implemented network messaging with WebSockets, without relying on built-in plugin channels that requires the presence of an online player.
- Implemented support for annotation-based message handler methods using reflections, allowing for automatic registration and invocation.
- Implemented RPC (Remote Procedure Call) methods with annotation-based registration via Bytebuddy and method interceptors.
- Implemented a custom binary protocol to serialize data passed in from RPC method arguments.

Arc0 OpenID Platform | *Java, Spring Boot, PostgreSQL, Next.JS, Typescript, Docker* — October 2025 – Present

- Developed an OpenID platform for authentication and authorization, supporting account connections to multiple popular identity providers (e.g. Discord).
- Implemented backend services with Spring Boot and PostgreSQL.
- Developed a frontend web page with Next.JS and typescript.
- Containerized and deployed the backend service using Docker.

Technical Skills

Languages: Java, C#, Rust, Python, Typescript, SQL, HTML
Frameworks: Spring Boot, Actix Web, Tokio, Next.JS, React, Spigot, Bukkit, NMS
Game Engines: Unity, Minecraft