Tianyi Huang

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EDUCATION

Columbia University — New York City, NY
M.S. in Computer Science, GPA: 4.0 — Expected Dec 2022

University of Washington — Seattle, WA
B.S. in Discrete Mathematics and Algorithm, GPA: 3.82 — Jun 2021

WORK EXPERIENCE

Mojang Studios — Redmond, WA
Project Volunteer — Jan 2021 - Jun 2021

- In a team of 3 students and network team lead at Mojang to prototype a game demo operating in a networked ECS architecture.
- Designed the network system that allows the partial update of each entity in the game, compatible with RakNet in Minecraft.
- Build everything entirely in the Entity Component System manner, with a server authoritative and thread safe design.
- Tested different serialization libraries for the peer-to-peer network system.
- Developed project in C++. Major libraries used: EnTT, ProtoBuffer, MessagePack, RakNet.

DELL EMC — Shanghai, China
Software Engineer Intern — Jun 2018 - Sep 2018

- Managed and optimized maintenance tasks for 2-4 EMC's storage hardware products as DELL RPS team.
- Studied cloud storage systems and shell script usage. Made a code validation tool in Java.

EXPERIENCES AND RESEARCHES

Suzhou Automotive Research Institute, Tsinghua University — Suzhou, China
Student member — Dec 2019 - Jan 2020

- Experienced implementation of autonomous driving algorithms on self-driving cars.
- Researched topics such as CAN connection, PID controller, obstacle avoidance and GPS navigation.

EarthGame Studio — Seattle, WA
Game Programmer — Jan 2019 - Sep 2019

- Led a team of 3 programmers, programmed main story of game, coded in Unity with C#.
- Presented demo of educational video game in Pacific Science Center in the Earth Day event.
- Published in Google Play and App Store. https://earthgames.org/2019/09/19/deal-a-green-new-election.

Washington Experimental Math Lab — Seattle, WA
Undergraduate Team Member — Sep 2018 - Jan 2019

- Examined over 20 integer sequences mathematically in the representation as sound.
- Presented findings in Smith Numbers, Happy numbers, etc. Hundreds of results are posted in: https://sites.math.washington.edu/~conroy/WXML/integerSequenceNoise/home.htm.

TECHNICAL SKILLS

- Java | Python | C++ | SQL | JavaScript | Matlab | Kotlin
- Git, Flask, Scikit-learn, React, node.js

SOFTWARE PROJECTS

FOSSSim Simulation Engine — Sep 2021

- Developed a physic simulation engine in C++ with fundamental features.
- Features including conservation of energy, collision handling, rigid body, elastic body, fluid simulation.

Android Application — Apr 2020

- Created an Android application for users to browse and look up specific Pokemon information.
- Wrote in Kotlin, featuring recycler view, volley, Gson and flattened structure.

Novel Comparisons via Markov Chain — Jan 2020

- Applying transitional matrices of Markov Chains to model letter sequences within each novel to potentially differentiate between various authorship.

Two-way SMS Application — Feb 2019

- Designed for developing countries with low internet bandwidth. An experimental Python program infused with Twilio's API via Flask to provide SMS service to subscribed users.
- Finalized the result as a full-stack project containing: a backend management site, a local SQL database management, a mobile messaging service allowing users to retrieve information via texting services.