

Jingze (Jacob) Ma

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EDUCATION

MS in Computer Science

Yale University, New Haven, CT

August 2024 - May 2025

Bachelor's in Computer Science (Games)

University of Southern California, Viterbi School of Engineering, Los Angeles, CA

May 2021 - Jul 2024

Bachelor's in Computational and Applied Mathematics

University of Southern California, Dornsife College of Letters, Arts and Sciences, Los Angeles, CA

May 2021 - Jul 2024

INTERNSHIP EXPERIENCE

Application Developer Engineer, eBaoTech International, Ltd., Shanghai, China

June 2023 - Aug 2023

- Designed a pipeline in programming language translation integrated in InsureMO platform by fine-tuning some LLM including ChatGLM v2. Research different existing LLM models, especially decoder-only transformer models, including GPT, ChatGLM, and LLaMa, and fine-tuned models, including Alpaca-LoRA and ChatGLM P-Tuning, by feeding in new dataset and designing new prompts
- Utilized PyTorch and Hugging Face's Transformer model while fine-tuning LLM models
- Constructed a new database concerning insurance data and operated data preprocessing, including quality filtering and sentence-level de-duplication in order to P-Tuning
- Trained and deployed models on predicting premium of pets using AWS SageMaker and S3 Bucket

Unity Developer, nPlace, Ltd., Shanghai, China

June 2022 - Aug 2022

- Developed adaptive downsampling for the data sensor converter and spacing carving by discarding points with low spatial distance to reduce pressure on the main thread with more stable refresh densities; the peak number of pixels per frame scan stabilized at less than 20k and averaged less than 10k, without significant sacrifice in accuracy
- Implemented the ground truth version and float version of Bresenham's algorithm in 3D with fixes on the error of Bresenham
- Helped and participated in the publication of Zaichang, a real-time 3D scanning modeling software in App Store

Digital Entertainment Research and Development (R&D) Department Intern

Jul 2021 - Aug 2021

Original Force, Ltd., Nanjing, China

- Researched and developed CPU Voxelization tool using C++ and C# in both Unity and Unreal, which was later used as a detector to accelerate the judgment of physical collision between the player and surrounding areas
- Grasped Computer Graphics, including ray tracing mechanisms, which are used in the development of CPU Voxelizer

SELECTED PROJECT EXPERIENCE

Lake Minnewaska ([Link](#))

Jun 2023 - May 2024

- Created a fishing simulator game as gameplay and AI engineer
- Constructed the fishing system in Unity, including boating, walking, casting, and reeling with self constructed state machine pipeline
- Established game ecosystem AI for different fish and NPCs using techniques including behavior tree

Splitwise Web Application

Aug 2022 - Dec. 2022

- Created the front-end application using Bootstrap templates and HTML/CSS
- Implemented backend RESTful API endpoints based on Java Spring Boot to support CRUD operations around the MySQL database. Managed database connection through MyBatis
- Built and managed Java packages in Maven and deployed the application on an AWS EC2 instance
- Created integration tests in JUnit and used Mock for unit tests

PUBLICATIONS

Key Factors to Determine the Influence of a Movie Using Machine Learning and Sentiment Analysis

May 2020 - Oct 2020

CIS, Torhea Education Group Inc., Remote

Instructor: Professor Houlihan

- Analyzed 30k reviews of 1k+ movies using Long Short-Term Memory (LSTM) network and an ensemble model combining rule-based method and LSTM model performing sentiment analysis, to identify the most significant factors that determine the influence of a movie
- Published the paper at 2020 2nd International Conference on Machine Learning ([Link](#))

SKILLS

- Programming Languages:** C++, C#, C, Java, JavaScript, HTML/CSS, Python
- Tools and Frameworks:** PyTorch, Hugging Face Transformer, Spring Boot, MySQL, SQLite, AWS, GitHub, PyTest