Jingze (Jacob) Ma

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EDUCATION

Bachelor's in Computer Science (Games) *May 2021 - Jul 2024*
University of Southern California, Viterbi School of Engineering, Los Angeles, CA

Bachelor's in Computational and Applied Mathematics *May 2021 - Jul 2024*
University of Southern California, Dornsife College of Letters, Arts and Sciences, Los Angeles, CA

- GPA: 3.98/4.0

Bachelor's in Computer Science *Aug 2020 - May 2021*
University of Rochester, Hajim School of Engineering and Applied Science, Rochester, NY

- GPA: 4.0/4.0

INTERNSHIP EXPERIENCE

Application Developer Engineer, *eBaoTech International, Ltd., Shanghai, China* *June 2023 - Aug 2023*

- Design a pipeline in programming language translation intergrated 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.
- Utilize PyTorch and Hugging Face's Transformer model while fine-tuning LLM models.
- Contruct a new database concerning insurance data and operated data preprocessing, including quality filtering and sentence-level de-duplication in order to P-Tuning.

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

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.
- Integrated Stripe API to support payments.
- 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. Configured continuous test run in Github Actions and visualized test results in a Grafana dashboard.

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)*

Clean Generation Program: Catalytic Performance Enhancement of Ni2P Electrocatalysts *Jun 2019 - Jul 2019*
National Engineering Laboratory, Beijing, China *Instructor: Professor Yi Wang*

- Conducted electrode tests and collected data using Python Pandas and Numpy, conducted basic data analysis and visualized data in Grafana dashboards.
- Published the paper on catalytic performance enhancement of Ni2P electronic catalysts in *International Journal of Hydrogen Energy (Link)*

SKILLS

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