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:** 4.0/4.0
- **Relevant Courses:** Probability Theory, Theory of Numbers, Calculus III, Principles of Software Development, Introduction to Algorithms and Theory of Computing, Data Structures and Object-Oriented Design, Game Design Workshop, Discrete Methods in Computer Science, Introduction to Interactive Entertainment
- **Dean's List** (Fall 2021, Spring 2022)

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
- **Dean's List** (2020 – 2021)

INTERNSHIP EXPERIENCES

Unity Developer *June 2022 - Aug 2022*
nPlace, Ltd., Shanghai, China
- Developed an 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 judgement of physical collision between player and surrounding areas
- Grasped Computer Graphics including ray tracing mechanisms, which is used in the development of CPU Voxelizer

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
- With a group of four, 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, using PyCharm and Jupyter Notebook
- 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, analyzed the electronic interaction and visualized the data using Python
- Published the paper on catalytic performance enhancement of Ni2P electronic catalysts on *International Journal of Hydrogen Energy (Link)*

EXTRACURRICULAR ACTIVITIES

Course Producer *Aug 2022 - Now*
University of Southern California, Viterbi School of Engineering, Los Angeles, CA
- Led weekly lab sessions, assisted in grading exams, checking Piazza and holding office hours, communicated with teams and instructor

Organizer and Programmer *May 2018 - Now*
Nineth Art Club, Nanjing, China
- Established the Nineth Art Club in 2018 for members to communicate trends in gaming industry, organized club activities
- Designed and created an indie game, *Reunion in Magic World*, using Unity, and published on GGJ website, in 2021 Global Game Jam
- With a group of two, designed and created a game, *After Blood*, using Roblox, in 2021 Roblox Game Jam

Level Designer and Programmer *Jan 2022*
Boston, United States
- Built a 2D, 3D platformer puzzle game that attempts to explore Unity's wide array of tools in a dystopian Sci-Fi setting with Unity
- With a group of seven, published in 2022 Global Game Jam (Link)

HONORS
- **Outstanding Student Coach Prize**, *United States Academic Decathlon (USAD), Remote* *Feb 2021*
- **Coaching Team of the Year**, *United States Academic Decathlon (USAD), Remote* *Feb 2020*

SKILLS
- **Proficient** in Java, C++, LaTeX; **Advanced** Unity and Python; **Intermediate** Unreal, C# and HTML
- **Language:** English (fluent), Mandarin (native), Japanese (daily)