# YUXUAN ZHANG

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## EDUCATION

**University of California, San Diego**　　　　　　　　　　　　　　Sep. 2025 – Expected Jun. 2027
*Master of Science in Computer Science*

**University of California, San Diego**　　　　　　　　　　　　　　Sep. 2021 – Mar. 2025
*Bachelor of Science in Data Science*　　　　　　　　　*GPA: 4.0/4.0, **summa cum laude** (Top 2%)*

## SELECTED HIGHLIGHTS

- **Publications**
  - **lmgame-Bench: How Good are LLMs at Playing Games?** (ICLR '25-Submitted) Lanxiang Hu, Mingjia Huo, Yuxuan Zhang, Haoyang Yu, Eric P. Xing, Ion Stoica, Tajana Rosing, Haojian Jin, Hao Zhang
  - **General Modular Harness for LLM Agents in Multi-Turn Gaming Environments** (ICML '25 Workshop) Yuxuan Zhang, Haoyang Yu, Lanxiang Hu, Haojian Jin, Hao Zhang

- **Projects**
  - **AI GamingAgent**　　github.com/lmgame-org/GamingAgent　　(**770+ GitHub stars**)
    **Co-led a multi-agent framework** enabling LLMs/VLMs to play video games and evaluate AI performance
  - **LLM Multi-Turn RL Training (GRL)**　　github.com/lmgame-org/GRL　　(**40+ GitHub stars**)
    **Co-led** development of a scalable LLM RL library supporting **training and evaluation** on multi-turn tasks
  - **AI Ace Attorney Gameplay**　　x.com/haoailab/status/1912231343372812508　　(**950k+ views**)
    **Led AI-agent design** for a viral demo that showcased gameplay and reached nearly one million views on X

## PROFESSIONAL EXPERIENCE

**HDSI Research Assistant**　　　　　　　　　　　　　　　　　　Mar. 2025 – Present
*UC San Diego — Halıcıoğlu Data Science Institute (HDSI), Dr.Hao Zhang*　　　　　　　*La Jolla, CA*
- Collaborated with Google to support **multi-turn PPO training** for LLMs on games using **JAX and TPUs**.
- Co-led modularization of a **multi-agent system** to scalably support games such as 2048, Sokoban, Tetris...
- Developed a **multi-threaded**, **end-to-end** gameplay and evaluation pipeline for **19 LLMs across 6 games**.
- Deployed a **JS-based interactive leaderboard** to benchmark **generative model** performance on gameplays

**Undergraduate Research Assistant, Hao AI Lab**　　　　　　　　　　Jun. 2024 – Mar. 2025
*UC San Diego — Halıcıoğlu Data Science Institute (HDSI), Dr.Hao Zhang*　　　　　　　*La Jolla, CA*
- Developed **AI-driven Roblox games** in **Lua** to support evaluation of model performance against players.
- Co-designed and deployed the JS-based LMGame website (lmgame.org) as the hub for blogs and project resources.
- Implemented a scalable **PostgreSQL system** for Elo rankings, enabling **large-scale** performance comparisons.
- Built a scalable **multithreaded** MySQL + AWS S3 pipeline processing **6.9 TB** of logs, improving throughput **4×**

**Data Scientist Research Intern, Maximov Lab**　　　　　　　　　　Apr 2023 – Dec 2024
*Scripps Research, Neuroscience Department, Dr.Anton Maximov*　　　　　　　　　　*La Jolla, CA*
- Built a 3D EM computer-vision pipeline with SAM 2 for neuron segmentation reaching $\geq$ **80%** validation accuracy
- Developed an interactive Neuronglancer web app for 3D visualization of large-scale 32-bit neuron datasets.

## TECHNICAL SKILLS

**Programming Languages**: Python, Java, C/C++, SQL, JavaScript, HTML/CSS, Shell/Bash, R, Lua
**Frameworks & Libraries**: PyTorch, JAX, Ray, DeepSpeed, Gymnasium, Triton, Node.js, React, OpenCL, OpenCV
**Developer Tools**: Git, Docker, Kubernetes, PostgreSQL, Google Cloud Platform, MongoDB, Postman, Linux/Unix
**Domains**: Natural Language Processing, Large Language Models, LLM Post-Training, Reinforcement Learning, Multi-Agent Systems, Computer Vision, Machine Learning, Deep Learning, Data Mining, Model Evaluation

## HONORS & AWARDS

**UCSD HDSI Scholarship Program**　　　　　　　　　　　　　　　Sep. 2023 – Jun. 2024
Awarded a scholarship for a research project proposal, receiving financial support for the academic year.