

Weizhen Wang

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Education

University of California, Los Angeles

Los Angeles, United States

M.S. in Computer Science

September 2023 - June 2025

- GPA 3.51/4.0.
- **Teaching Assistant:** Introduction to Computer Science I & II.
- **Research Assistant:** at UCLA Zhou's Lab. Focusing on enabling Vision-Language-Models to serve as embodied agents.
- **Course Reader:** for COMSCI 260R, Reinforcement Learning.
- **Courses:** Reinforcement Learning, Bayesian Networks, Advanced Data Mining, Large-scale Machine Learning, Software Engineering.

University of California, Los Angeles

Los Angeles, United States

B.S. in Computer Science, Minor in Mathematics

September 2019 - June 2023

- GPA 3.9/4.0.
- Active member of Upsilon Pi Epsilon at UCLA, a CS honor society.
- Dean's Honor List.
- **Courses:** Network Theory, Machine Learning, Deep Learning for Computer Vision, Natural Language Processing, Optimization, Software Engineering, Database Management System, Computer Network, Numerical Methods, Data Science.

Research Experience

UCLA Bolei Zhou's Lab

Los Angeles, United States

Graduate Student Researcher

March 2023 -

- Focusing on empowering general-purpose Vision-Language-Models (VLMs) as embodied agents.
- Leading author for a large-scale benchmark for evaluating and improving general-purpose VLMs as embodied agents. **Accepted for CVPR 2025.** Fine-tuned VLMs on the proposed benchmark demonstrate drastic improvements in embodied scene understanding, verified in both open-loop Visual Question-answering and closed-loop driving tasks.
- Proposed project contributed to the lab's winning of the 2025 **Office of Naval Research Young Investigator Award.**

UCLA SRILabs

Los Angeles, United States

Undergraduate Student Researcher

March 2023 - Jun 2023

- Supervised by Ph.D. candidate Sven Malama and Ph.D. Debasish Jana.
- Aggregate existing road crack datasets to train a Yolov8 model for the instance segmentation task. The downstream application detects road failures from images shot in the Greater Los Angeles Area.

UCLA Miryung Kim's Lab

Los Angeles, United States

Undergraduate Student Researcher

Fall 2021 - Fall 2022

- Supervised by Ph.D. candidate Jiyuan Wang and Professor Miryung Kim.
- Developed a heterogeneous differential fuzzer for the Intel DevCloud platform.
- Benchmark Intel OneAPI asynchronous methods. Discover errors in the official documentation.

Work Experience

UCLA Computer Science

Los Angeles, United States

Special Grader

Jan 2025 - Mar 2025

- Grade assignments and examinations for a graduate-level course in reinforcement learning.

UCLA Computer Science

Los Angeles, United States

Teaching Assistants

Sep 2023 - Mar 2024

- Host weekly office hours and discussion sessions. Grade homework exams.

iFLYTEK

Hefei, China

Algorithm Research Intern(Autonomous Driving Department)

Aug 2023 - Sep 2023

- Develop deep-learning-based intelligent agents for autonomous driving to augment the Kalman Filter control process.
- Integrate open-source driving simulator, MetaDrive, into data generation pipeline. Bridge research interest with commercial usage.

3H1 Technology

Hefei, China

Artificial Intelligence Development Intern

July 2023 - Aug 2023

- Deploy ChatGLM2-6B on the company's server under the resource budget. Host the models for internal usage.

Publications

Embodied Scene Understanding for Vision Language Models via MetaVQA

Los Angeles, U.S.

First Author

Jun 2023 - Dec 2024

- **Accepted for CVPR 2025**

- A generic benchmark for evaluation and improvements of the embodied scene understandings of general-purpose Vision-Language-Models.
- Improved VLMs' situational awareness with emergent barrier evasion behavior.
- Project available at <https://metadriverse.github.io/metavqa/>

STORK: Improving the Fidelity of Mid-NFE Sampling for Diffusion and Flow Matching Models

Los Angeles, U.S.

Second Author

Feb 2025 - May 2025

- **In submission for NeurIPS 2025**

- A fast structure-independent ODE solver for the sampling of diffusion models using around 20 model evaluations.
- Beat SOTA methods by significant margins with noise-predicting and flow-matching models.
- Project will be made public soon.

Dreamland: Hybrid World Creation with Simulator and Generative Models

Los Angeles, U.S.

Co-author

Feb 2025 - May 2025

- **In submission for NeurIPS 2025**

- A hybrid world model for scalable agent learning in autonomous driving.
- Combine physics-based simulation with realistic re-rendering using generative models for high-fidelity simulation with rich visual appearances.
- Project will be public soon.

Projects

MPT: Transformer in Trajectory Prediction of Autonomous Vehicles

Los Angeles, U.S.

Author

Jan 2023 - Mar 2023

- An innovative transformer-based encoder-decoder architecture for real-world trajectory predictions leveraging Waymo Open Motion Dataset.
- Improved convergence rate and Minimum Average Displacement Error (minADE) by 20 percent.

Commonsense Diagnostics in Large Language Models

Los Angeles, U.S.

Author

Jan 2023 - Mar 2023

- Leverage Com2Sense diagnostics dataset to evaluate commonsense internalization of popular pre-trained Large Language Models (LLMs).
- Achieve first-place commonsense performance in class using a fine-tuned pre-trained DeBERTa-v3-Large model on Huggingface.

BruinRide: A Rideshare Application for Bruins

Los Angeles, U.S.

Frontend Developer

Sep 2022 - Dec 2022

- A full-stack ride-sharing web application targeting the UCLA community with NFT rewards.

Skills

Programming Python (PyTorch, Scikit-learn, Transformers, OpenCV, Diffusers, etc.), C/C++, React/Next.js, Database Systems(Firebase, etc.)

Miscellaneous Linux, Shell (Bash/Zsh), \LaTeX , Git, Google Cloud, AWS

References

Embodied Scene Understanding for Vision Language Models via MetaVQA

Weizhen Wang, Chenda Duan, Zhenghao Peng, Yuxin Liu, Bolei Zhou

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