

Zhangyun Tan

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EDUCATION

University of Rochester

BS in Computer Science

- Cumulative GPA 3.67 out of 4.00

• Courses: Computer Vision, Machine Learning, Algorithms, Object-oriented Programming, Discrete Math

University of California, Berkeley

Exchange in EECS

- Courses: Convex Optimization

Rochester, NY

05/2026 (expected)

Berkeley, CA

01/2024-05/2024

EXPERIENCE

University of Rochester | Undergrads Research Assistant advised by Prof. Chenliang Xu **01/2025-present**

- Contributing to projects on visual generation/ video understanding

DeepBlue AI | NLP research internship

07/2023 - 01/2024

- **"Virtual Town" Program:** Integrated a ChatGLM into a 2D map-based "Virtual Town" simulation, collaborating with Unity engineers to transform 2D map data into a realistic 3D map, enabling culturally informed, context-driven agent behaviors.
- Implemented NeRF algorithms to transform 2D images into 3D reconstructions, and applied these techniques to produce high-fidelity 3D environments industrially.

PROJECTS

Accelerated Gradient Descent with Mirror Descent

05/2024

- Established and validated theoretical convergence rates for mirror descent and hybrid mirror-gradient methods, enhancing optimization efficiency in convex settings.
- Developed and implemented accelerated gradient descent algorithms in Python, outperforming baseline optimizers in empirical benchmarks.

Embodied Gaming Agent

09/2023 - 01/2024

- Designed a reinforcement learning (RL) agent powered by GPT-4 for decision-making in a JavaScript-based Minecraft-like simulation.
- Leveraged a multimodal approach combining visual cues, environment states, and language-based instructions to guide adaptive agent behavior.
- Achieved higher task completion rates and better strategic adaptability compared to baseline RL agents using smaller language models.

Generative Agents for Urban Simulation

08/2023 - 12/2023

- Integrated ChatGLM, a Chinese large language model (LLM), into a 2D map environment for culturally nuanced decision-making and context-aware interactions.
- Collaborated with 3D engineers to deploy generative agents in a Unity-based simulation of downtown Wuhan, driving narrative-rich, context-sensitive actions in dynamic environments.

TOOLS

Python, R, C/C++, Java Script, MATLAB, PyTorch, TensorFlow, scikit-learn, NumPy, pandas