

YUKUAN LU

Research Assistant, UC Davis

🌐 <https://lyk-love.cn/about/> · ✉ lyk1037400635@gmail.com

RESEARCH INTEREST

I study **world models**, aiming to build neural simulators that capture the underlying physical laws and dynamical structure of real-world environments. I also work on unsupervised visual representation learning and generative models.

Keywords: World Models, Unsupervised Learning, Generative Models

EDUCATION

M.S. in Electrical and Computer Engineering, UC Davis June. 2025

- Advisor: Professor Yubei Chen
- Thesis: *Learning Important Subtle Signals in World Model Training*

B.E. in Software Engineering, Nanjing University June. 2023

- Advisor: Professor Minxue Pan
- Thesis: *A comment clone detection method based on comment classification*

RESEARCH EXPERIENCE

Self-Supervised Learning Lab, UC Davis Sept. 2023 – Present

- Research Assistant
- Advisor: Professor Yubei Chen
- Conducting research on world models.

PUBLICATIONS

Authorship convention in the field: lead senior authors are listed last; lead junior author is listed first.

[2] **Yukuan Lu**, Zaishuo Xia, Weyl Lu, Yubei Chen,
Concept-Guided Spatial Regularization for World Models in Atari Pong (arXiv:2607.15142)

[1] Zaishuo Xia, **Yukuan Lu**, Xinyi Li, Yifan Xu, Yubei Chen,
Clone Deterministic 3D Worlds with Geometrically-Regularized World Models (arXiv:2510.26782)

SKILLS

- Programming: Python, Bash
- Technologies and Frameworks: PyTorch, JAX, Git, Docker, Linux Shell, Tmux, Vim

I am proficient in configuring deep learning and reinforcement learning development environments, equipped with a complete toolchain and a clear, efficient workflow for hacking and managing complex research codebases.

OTHER ACTIVITIES

📺 **Bilibili Channel**

I also run a channel sharing frontier AI research, with a focus on world models.