

Penglin Cai

📍 Beijing, China ✉ cpl@stu.pku.edu.cn 🔗 <https://intellouis.github.io/> 🏠 Intellouis

Education

Peking University

Sept 2021 – Jul 2025

BEng in Artificial Intelligence | Tong Class | Yuanpei College

- **GPA:** 3.713/4.000
- **Selected Courses:** Mathematical Foundation for Artificial Intelligence (96), Natural Language Processing with Deep Learning (94), Rationality and Intelligence: From Human to Machine (96), Directed Research in AI Systems (95), Multi-Agent Systems (98)

Research Interest

Reinforcement Learning, Embodied AI, General Agents that can acquire skills and accomplish tasks in the open world

Research Experience

Research Intern

Jul 2022 – Present

PKU-RL Lab

- Apply pre-trained VLA models to dexterous robotic hands with new modalities
- Research on offline model-based skill stitching

Research Intern

Dec 2022 – Aug 2023

Beijing Academy of Artificial Intelligence (BAAI)

- Research on creative agents constructing buildings in Minecraft with imagination

Publications and Preprints

Creative Agents: Empowering Agents with Imagination for Creative Tasks

Chi Zhang*, Penglin Cai*, Yuhui Fu, Haoqi Yuan, Zongqing Lu

arXiv, Dec 2023

Plan4MC: Skill Reinforcement Learning and Planning for Open-World Minecraft Tasks

Haoqi Yuan, Chi Zhang, Hongcheng Wang, Feiyang Xie, Penglin Cai, Hao Dong, Zongqing Lu

NeurIPS Foundation Models for Decision Making Workshop, 2023

Projects

Mastering Dexterous Hands Grasping with Tactile-Aided Vision-Language-Action Models

Dec 2024 – Present

- Apply pre-trained VLA models to dexterous robotic hands, with tactile information as a complementary modality
- Key Words: Vision-Language-Action Models, Dexterous Hands, Embodied Agents

Offline Model-Based Skill Stitching

Mar 2024 – Sept 2024

- Research on stitching two adjacent skills in the domain of offline model-based reinforcement learning
- Key Words: Skill Stitching, Offline RL, Model-Based RL

Large-Scale Multi-Agent Cooperation in Multi-Team Systems

Mar 2024 – Aug 2024

- Research on the optimization and approximate equilibrium when there are multiple teams to compete, with agents cooperating within each team, in Neural MMO
- Key Words: Multi-Agent Systems, Multi-Agent Reinforcement Learning, Self Play

Academic Services

Reviewer, NeurIPS Open-World Agents workshop, 2024

Reviewer, NeurIPS Foundation Models for Decision Making workshop, 2023

Awards and Scholarships

Zheng Geru Outstanding Student Scholarship, Peking University, 2023-2024 Academic Year

Merit Student, Peking University, 2023-2024 Academic Year

The Third Prize of Peking University Scholarship, Peking University, 2022-2023 Academic Year

Award for Academic Excellents, Peking University, 2022-2023 Academic Year

The First Prize of Freshman Scholarship, Peking University, Fall 2021