OLIVIA Y. LEE

oliviayl@stanford.edu | linkedin.com/in/oliviaylee/ | oliviaylee.github.io

EDUCATION

Stanford University — **Palo Alto, CA**

M.S. with Research Distinction in Computer Science (Artificial Intelligence) — Jan 2023 – Jun 2025
M.S. Advisors: Jeannette Bohg, C. Karen Liu. GPA: 4.08 / 4.0

B.S. with Honors in Symbolic Systems (Learning), Minor in Mathematics — Sep 2020 – Jun 2024
B.S. Advisors: Chelsea Finn, Nick Haber. GPA: 4.12 / 4.0

Raffles Institution (Junior College) — **Singapore**

Singapore-Cambridge General Certificate of Education A-Level — Jan 2018 – Dec 2019

PUBLICATIONS

Tyler Lum*, **Olivia Y. Lee***, C. Karen Liu, Jeannette Bohg. "Crossing the Human-Robot Embodiment Gap with Sim2Real Reinforcement Learning using One Human Demonstration." In submission. arXiv:2504.12609

Olivia Y. Lee, Annie Xie, Kuan Fang, Karl Pertsch, Chelsea Finn. "Affordance-Guided Reinforcement Learning via Visual Prompting." *Robotics: Science and Systems 2024, Task Specification & Lifelong Robot Learning.* In submission to *IEEE International Conference on Intelligent Robots and Systems (IROS) 2025*. arXiv:2407.10341

Maximilian Du*, **Olivia Y. Lee***, Suraj Nair, Chelsea Finn. "Play It by Ear: Learning Skills amidst Occlusion through Audio-Visual Imitation Learning." *Robotics: Science and Systems 2022*. arXiv:2205.14850

Olivia Y. Lee, Tom Vergoossen. "An updated analysis of satellite quantum-key distribution missions." arXiv:1909.13061

RESEARCH PROJECTS

Trajectory-Conditioned Bimanual Manipulation with Dexterous, Multi-Fingered Hands — **Feb 2025 – Jun 2025**

Stanford Artificial Intelligence Lab (IPRL Lab). Advised by C. Karen Liu, Jeannette Bohg

- Developed bimanual system to learn complex multi-object dexterous manipulation from a small number of human demos.
- Trained trajectory-conditioned multi-task policies for that can adapt to novel trajectories at inference time.

Cross-Embodiment Learning from One Demo using Sim2Real Reinforcement Learning — **Jun 2024 – Mar 2025**

Stanford Artificial Intelligence Lab (IPRL Lab). Advised by C. Karen Liu, Jeannette Bohg — *Site*, *Paper*

- Developed real-to-sim-to-real pipeline for cross-embodiment learning of dexterous manipulation skills from one human demo.
- Extracted 6D object pose trajectories and human hand pre-grasps to initialize RL policy training in high-fidelity simulation.
- Deployed policies trained in simulation zero-shot on a KUKA arm and Allegro hand with real-time object pose tracking.

Affordance-Guided Reinforcement Learning via Visual Prompting — **May 2023 – Jun 2024**

Stanford Artificial Intelligence Lab (IRIS Lab). Advised by Annie Xie, Kuan Fang, Karl Pertsch, Chelsea Finn — *Site*, *Paper*

- Implemented approach leveraging vision-language models (VLMs) to define dense rewards for online reinforcement learning.
- Developed pipeline for extracting affordance representations from VLMs to generate dense waypoint trajectories in image space.
- Pretrained policies on Bridge data, finetuned on modest number of demonstrations for implementation on a WidowX robot.

Play it by Ear: Learning Skills amidst Occlusion through Audio-Visual Imitation Learning — **Mar 2021 – Jun 2022**

Stanford Artificial Intelligence Lab (IRIS Lab). Advised by Suraj Nair, Chelsea Finn — *Site*, *Paper*

- Implemented multimodal imitation learning over vision, audio, and memory, to facilitate success on partially observed tasks.
- Developed behavior cloning algorithms with MuJoCo, Robosuite, and PyTorch for implementation on Franka-Emika Panda robot.
- Established pipeline to train polices offline with expert demonstrations and finetune online with human interventions.

COURSEWORK

Graduate Computer Science: CS 168 Modern Algorithms, CS 205L Mathematical Machine Learning Methods, CS 224N Natural Language Processing, CS 229 Machine Learning, CS 231N Computer Vision, CS 326 Advanced Robotic Manipulation, CS 330 Deep Multi-task & Meta-Learning, CS 422 Interactive & Embodied Learning, OSPOXFRD 196Q Graph Representation Learning (Oxford Study Abroad)
Undergraduate Computer Science: CS 103 Discrete Mathematics, CS 107 Computer Organization & Systems, CS 109 Probability, CS 110 Computer Systems Principles, CS 157 Computational Logic, CS 161 Algorithms Analysis, CS 221 Principles of Artificial Intelligence
Mathematics: MATH 51 Linear Algebra, MATH 52 Multivar. Integral Calc., MATH 87Q Topology Theory, MATH 101 Probability Theory & Markov Processes, MATH 151 Probability Theory (audit), PHIL 150 Mathematical Logic, PHIL 151 Metalogic, PHIL 152 Computability
Philosophy: Philosophy of AI, Philosophy of Mind, Theories of Consciousness, Philosophy and Science of Perception, Conceptual Issues in Cognitive Neuroscience, Directed Reading: Philosophy of Mind (Oxford Study Abroad)
Psychology & Linguistics: Curiosity in AI, Semantics & Pragmatics, Psycholinguistics, Sociolinguistics, Ethical & Social Issues in NLP

HONORS & AWARDS

Stanford Department of Computer Science, Distinction in Research **Jun 2025**
- Graduated with Distinction in Research. Master's thesis titled "Scaling Robot Learning without Scaling Human Effort". *Thesis*

Stanford Department of Symbolic Systems, Honors Program **Sep 2023 – Jun 2024**
- Graduated with Honors and Distinction. Honors thesis titled "Leveraging Affordance Representations for Robot Learning". *Thesis*

Phi Beta Kappa Honors Society, California Beta Chapter **May 2024**
- Nationwide honors society awarding students for excellence and breadth of undergraduate scholarly accomplishments. *About PBK*
- Awarded to the top 10% of undergraduates of Stanford's 2024 graduating class.

Tau Beta Pi Scholarship 2023-24 **Jul 2023**
- Awards ~200 members across all chapters nationwide with funds to support their studies and research, based on academic achievement, extracurriculars, and promise of substantial contributions to engineering. *About TBP Scholarship*

Tau Beta Pi Engineering Honors Society, California Gamma Chapter **Jun 2023**
- Nationwide engineering honors society. Elected junior year, top 12.5% of juniors in the School of Engineering. *About TBP*

Symbolic Systems Research Fellow 2023 **Jun 2023**
- Selected as 1 of ~20 fellows to receive funding for Symbolic Systems summer research program. *About SymSys Fellows*

Stanford Engineering Research Scholars 2022 **Feb 2022**
- Awarded to underrepresented students interested in engineering research to empower graduate departments. *About SERIS*
- Selected as 1 of 16 students from colleges across the US to participate in Stanford's Engineering Research program.

CURIS Fellowship 2021 **Jun 2021**
- Selected as 1 of 17 fellows to receive funding for undergraduate Computer Science research program. *About CURIS Fellows*

TEACHING & OUTREACH

Stanford School of Engineering, Computer Science Department | *Course Assistant* **Sep 2023 – Dec 2024**
- Teaching assistant for several graduate-level CS classes: CS 157 Computational Logic (Fall 2023, Fall 2024), CS 224N Natural Language Processing (Winter 2024, Spring 2024), CS 229 Machine Learning (Summer 2024). Received several positive reviews.
- Graded assignments and mentored final projects. Held office hours to clarify queries, taught review sessions, set and revised tests.

Stanford Symbolic Systems Department | *Advising Fellow* **Sep 2023 – Jun 2024**
- Advised undergraduates in Symbolic Systems to chart their academic careers, declare majors, and engage in career planning.
- Equipped students with skills to apply for departmental research opportunities, study abroad programs, and research funding.
- Organized research symposiums, distinguished speaker series, and alumni panel events for Symbolic Systems students.

Tau Beta Pi, California Gamma Chapter | *Professional Development Chair* **Apr 2023 – Jun 2024**
- Organized professional development events for members with startup CEOs, industry partners, and government agencies.
- Organized research symposiums for Stanford engineering faculty to share and present research programs with students.
- Connected chapter members to national TBP resources, such as scholarships, fellowships, financial aid, and research grants.

Inspirit AI | *Instructor & Research Mentor* **Jun 2023 – Dec 2023**
- Taught high school students AI fundamentals. Mentored advanced high school students in independent AI research projects.

Stanford Women in Computer Science | *Outreach Volunteer* **Sep 2020 – Mar 2021**
- Developed after-school coding program for low-income, underrepresented students in STEM from the Palo Alto School District.

WORK EXPERIENCE & SKILLS

Accel Leadership Program | *Stanford Technology Ventures Program (STVP) Fellow* **Jan 2025 – Jun 2025**
- Fellowship exploring startup strategy, leading and scaling technical ventures, organizational structure, and fundraising. *About ALP*
- Leading site visit and team-based case study in collaboration with CEOs of Accel's portfolio companies.

Stanford Artificial Intelligence Laboratory – IPRL Lab | *Graduate Researcher* **Jun 2024 – Jun 2025**
- Conducted research in robotics and computer vision, studying autonomous robot manipulation and sensorimotor control.
- Co-led two projects in collaboration with Tyler Lum, Prof. C. Karen Liu, and Prof. Jeannette Bohg.

Stanford Artificial Intelligence Laboratory – IRIS Lab | *Undergraduate Researcher* **Mar 2021 – Jun 2024**
- Conducted research in reinforcement learning and robotics studying intelligence through robotic interaction at scale.
- Proposed direction, initiated experiments, analyzed results, presented at weekly meetings, prepared papers and presentations.
- Led one project and co-led a second project, in collaboration with Suraj Nair, Annie Xie, and Prof. Chelsea Finn.

Salesforce | *Full-Stack Software Engineer* **May 2022 – Aug 2022**
- Contributed to Flow Builder, a low-code tool for building, managing, and running automated end-to-end enterprise workflows.
- Enhanced user customization tools in Flow Builder using React, Typescript, and HTML/CSS by shipping production-ready code.
- Collaborated with engineers, product managers, and UI/UX team to iterate on features for September 2022 product release.

Languages: Python, C++, C, JavaScript, React; **ML & Data Tools**: PyTorch, NumPy, OpenCV, Open3D, Matplotlib, SLURM, Git, Linux
Robot Tools: MuJoCo, PyBullet, Robosuite, IsaacGym, ROS, Franka-Emika Panda Arm, WidowX Arm, KUKA Arm, Allegro Hand
Research Areas: Machine Learning, Robotics, Imitation & Reinforcement Learning, Computer Vision, Natural Language Processing

Updated May 2025