

Lawrence Jang

CONTACT	EMAIL: ljang@cs.cmu.edu WEBSITE: lawrenceckjang.github.io
RESEARCH INTERESTS	Aligning human preferences and instilling human capabilities within LLM agents; Reproducible evaluation and benchmarking LLM agents; LLM agents for automating everyday human computer tasks
EDUCATION	<p>Carnegie Mellon University, Pittsburgh, PA, United States M.S. Machine Learning, GPA: 4.00 Jan 2024 - May 2024</p> <ul style="list-style-type: none">• Advisor(s): Dr. Ruslan Salakhutdinov, Dr. Katerina Fragkiadaki• Relevant courses: Advanced Deep Learning, Probabilistic Graphical Models, Theoretical and Empirical Foundations of Modern Machine Learning, Probability and Mathematical Statistics, Advanced Machine Learning Theory <p>Carnegie Mellon University, Pittsburgh, PA, United States B.Sc. Statistics and Machine Learning, GPA: 3.73 Aug 2019 - Decs 2023</p> <ul style="list-style-type: none">• Research advisor(s): Dr. Ron Yurko• Relevant courses: Convex Optimization, Distributed Machine Learning with Large Datasets, Deep Reinforcement Learning, Non-Parametric Learning, Modern Regression, Multilevel and Hierarchical Modeling
PUBLICATIONS	<p>VideoWebArena: Evaluating Long Context Multimodal Agents with Video Understanding Web Tasks Lawrence Jang, Yinheng Li, Charles Ding, Justin Lin, Paul Liang, Dan Zhao, Rogerio Bonatti, Kazuhito Koishida (<i>work done while at Microsoft</i>) Published in the Workshop on Open-World Agents at NeurIPS 2024 Under review, ICLR 2025</p> <p>Windows Agent Arena: Evaluating Multi-Modal OS Agents at Scale Rogerio Bonatti, Dan Zhao, Francesco Bonacci, Dillon Dupont, Sara Abdali, Yinheng Li, Yadong Lu, Justin Wagle, Kazuhito Koishida, Arthur Buckner, Lawrence Jang, Zack Hui (<i>work done while at Microsoft</i>) Published in the Workshop on Open-World Agents at NeurIPS 2024 Published in the Towards Safe and Trustworthy Agents Workshop at NeurIPS 2024 Under review, ICLR 2025</p> <p>ICAL: Continual Learning of Multimodal Agents by Transforming Trajectories into Actionable Insights Gabriel Sarch, Lawrence Jang, Michael J. Tarr, William W. Cohen, Kenneth Marino, Katerina Fragkiadaki Published in NeurIPS 2024 (Spotlight)</p> <p>MMoE: Enhancing Multimodal Models with Mixtures of Multimodal Interaction Experts Haofei Yu*, Zhengyang Qi*, Lawrence Jang*, Ruslan Salakhutdinov, Louis-Philippe Morency, Paul Pu Liang Published in EMNLP 2024</p> <p>VisualWebArena: Evaluating Multimodal Agents on Realistic Visual Web Tasks Jing Yu Koh, Robert Lo*, Lawrence Jang*, Vikram Duvvur*, Ming Chong Lim*, Po-Yu Huang*, Graham Neubig, Shuyan Zhou, Ruslan Salakhutdinov, Daniel Fried Published in ACL 2024 Published in the LLM Agents Workshop at ICLR 2024</p>
ACADEMIC RESEARCH EXPERIENCE	<p>Machine Learning Department, Carnegie Mellon University <i>Graduate Research Assistant</i> Jan 2024 - present</p> <ul style="list-style-type: none">• Conducted research under Dr. Ruslan Salakhutdinov on multimodal agent benchmarks and agentic frameworks.• Conducted research under Dr. Ruslan Salakhutdinov on training a mixture-of-experts inspired multimodal model based upon multimodal interactions.• Conducted research under Dr. Katerina Fragkiadaki on retrieval augmented multimodal agents with self-generating in-context memories.

PROFESSIONAL EXPERIENCE	Microsoft	May 2024 - Aug 2024
	<i>Research Intern</i>	
	<ul style="list-style-type: none">• Helped developed and publish Windows Agent Arena, a scalable OS platform for testing and benchmarking of multi-modal AI agents.• Created VideoWebArena, a video-based benchmark intended to test performance of long-context multimodal agents.	
	Chicago Cubs	May 2022 - Aug 2022
	<i>Research and Development Intern</i>	
HONORS AND AWARDS	<ul style="list-style-type: none">• Modeled multivariate joint batted ball distributions with copula models to automate a synthetic data generation of a player's batted ball profile.	
	Major League Baseball Commisioner's Office	May 2021 - Aug 2021
	<i>Data Science Intern</i>	
	<ul style="list-style-type: none">• Conducted data analysis on spin-rate trends in investigation of foreign substance usage.• Created new high-sensor camera datasets and blog writeups regarding new MLB data innovations.	
	FormFree	May 2020 - Aug 2020
TEACHING EXPERIENCE	<i>Data Analytics Intern</i>	
	<ul style="list-style-type: none">• Identified and manually labeled raw data logs of financial transactions to improve NLP model.• Created and visualized company financial datasets.	
	Carnegie Mellon University Machine Learning Department TA of the Year	2024
	Carnegie Mellon University Statistics Department Undergraduate TA of the Year	2024
	Dean's List (High Honors)	2021, 2022, 2023
VOLUNTEERING AND SERVICE	Carnegie Mellon University	Aug 2022 - present
	<i>Teaching Assistant</i>	
	<ul style="list-style-type: none">• 10-703 Deep Reinforcement Learning (Fall '22, Spring '23, Fall '23, Fall '24)• 10-708 Probabilistic Graphical Models (Fall '23, Spring '24)• 11-777 Multimodal Machine Learning (Fall '24)• 36-402 Modern Regression (Spring '23, Spring '24)• 36-401 Modern Regression (Fall '23)	
	Moderator for London Machine Learning Meetup: LLaVA	2024
	CMU MSML Admissions Committee	2023
TECHNICAL SKILLS	CMU Paths to AI Research Mentor	2024-Present
	Founder of CMU Korean-American Scientists and Engineers Association Chapter	2022-Present
	CMU Club Basketball Head Coach	2022-Present
	PROGRAMMING: Python, R, SQL	
	MACHINE LEARNING FRAMEWORKS: PyTorch, Tensorflow, HuggingFace Transformers, scikit-learn, wandb, numpy, pandas, matplotlib, ggplot2, tidyverse	