

# Lawrence Jang

---

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

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