Ariel N. Lee

AI Researcher & Data Engineer

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EDUCATION

M.Sc., Boston University (BU)　　　　**GPA: 3.71**　　　　Boston, MA
Electrical & Computer Engineering - Data Analytics Specialization　　*Sep 2020 – May 2023*
Activities: Out in STEM; Graduate Women in Science & Engineering

B.Sc., University of California, Los Angeles (UCLA)　**GPA: 3.45**　Los Angeles, CA
Microbiology, Immunology, & Molecular Genetics (MIMG)　　*Sep 2011 – Jun 2015*

POSITIONS

Raive, Founding Research Scientist, Multimodal Models　　*Sep 2023 – Nov 2024*
Generative multimedia foundation models with IP attribution. Applied experience in large-scale multimodal dataset collection/filtering, VLM distillation, post training, and efficient lowrank personalization.

Data Provenance Initiative, Lead　　*Mar 2024 – Present*
Recent work featured by the New York Times: analysis of 14,000+ web domains to understand evolving access restrictions in AI and improve transparency, documentation, and informed use of data.

PUBLICATIONS

[**Paper**, ICLR 2025]
Shayne Longpre, Nikhil Singh, ... (22 authors), **Ariel N. Lee**, ... (15 authors), Stella Biderman, Alex Pentland, Sara Hooker, Jad Kabbara. "Bridging the Data Provenance Gap Across Text, Speech, and Video" *International Conference on Learning Representations (ICLR) (2025)*

[**Paper**, NeurIPS 2024]
Shayne Longpre, Robert Mahari, **Ariel N. Lee**, Campbell Lund, ... (44 authors), Sara Hooker, Jad Kabbara, Sandy Pentland. "Consent in Crisis: The Rapid Decline of the AI Data Commons" *Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks Track (2024)*

[**Paper**, NeurIPS Workshop 2024]
Clément Bonnet, **Ariel N. Lee**, Franck Wertel, Antoine Tamano, Tanguy Cizain, Pablo Ducru. "From Text to Pose to Image: Improving Diffusion Model Control and Quality" *Neural Information Processing Systems (NeurIPS) Workshop on Compositional Learning: Perspectives, Methods, and Paths Forward (2024)*

[**Paper**, NeurIPS Workshop 2023]
Ariel N. Lee, Cole J. Hunter, Nataniel Ruiz. "Platypus: Quick, Cheap, and Powerful Refinement of LLMs" *Neural Information Processing Systems (NeurIPS) Workshop on Instruction Tuning and Instruction Following (2023)*

[**Paper**, arXiv 2023]
Ariel N. Lee, Sarah Adel Bargal, Janavi Kasera, Stan Sclaroff, Kate Saenko, Nataniel Ruiz. "Hardwiring ViT Patch Selectivity into CNNs using Patch Mixing" *preprint arXiv:2306.17848 (2023)*

PRESENTATIONS

[**Research Presentation, 2024**]
Women in AI & Robotics

[**Research Presentation, 2024**]
AI Tinkerers x Human Feedback Foundation

[**Guest Lecturer, 2023**]
Hong Kong University of Science and Technology
LLMOps, Prof. Sung Kim

EXPERIENCE

Platypus LLMs, garage-bAInd   Boston, MA
Co-lead Researcher, Open Source Large Language Models   *May 2023 – Aug 2023*

- Platypus models and dataset have **1M+ downloads** on HuggingFace. Our best model, tuned on the Llama architecture, was the global leader in post trained open-source LLMs at the time of release and for two months after.
- Researched low-cost and efficient ways to refine domain-specific SOTA LLMs using LoRA and refined datasets with **Cole J. Hunter** and **Dr. Nataniel Ruiz**.

Boston University, AI4ALL   Boston, MA
Researcher, Program Coordinator   *May 2022 – May 2023*

- Conducted research with **Dr. Nataniel Ruiz**, **Prof. Sarah Adel Bargal**, and **Prof. Kate Saenko** to study patch selectivity in modern convnets and ViTs. Worked on counterfactual simulation and testing of neural nets.
- Co-led AI4ALL summer program at BU to teach a diverse group of high schoolers about AI.

Boston University, College of Engineering   Boston, MA
Deep Learning Course Grader   *Jul 2022 – May 2023*

- Completed grading and answered student questions for the Deep Learning graduate course with **Prof. Sarah Adel Bargal** and **Prof. Brian Kulis**.

TeachForward & BU Wheelock Educational Policy Center   Boston, MA
Data & Process Engineer, MLOps Dev Team   *Sep 2022 – Dec 2022*

- Developed a feature extraction pipeline to analyze the use of teaching time based on 10,000+ videos of classroom observations.
- Created a simple user interface for client using gradio and Hugging Face spaces. User uploads a video and pipeline returns mp4 files with object and activity detection annotations, among others.

eMinutes   Los Angeles, CA — Boston, MA
Corporate Paralegal (Remote)   *Aug 2019 – Mar 2021*
Manager of Entity Management   *Oct 2018 – May 2019*
Corporate Paralegal   *Apr 2017 – Oct 2018*

- Identified optimization opportunities in the company's web-based document and communication system, in addition to corporate filings.

Law Offices of Sanford Jossen   Los Angeles, CA
Paralegal   *Oct 2016 – Apr 2017*
Legal Assistant   *Oct 2015 – Oct 2016*

- Researched and drafted legal documents, and summarized complex medical records.

Projects & Competitions

[Competition, META AI 2023]
Meta AI Video Similarity Challenge – **8/196** overall, **1/42** in AI grad course | Leaderboard
- Used a pretrained, Self-Supervised Descriptor for Copy Detection model (ResNeXt101) to find similar, manipulated videos in a dataset of 40,000+ videos.

[Competition, Kaggle 2023]
Leveraging Fine-tuned Models for Prompt Prediction | Code | Leaderboard
- Ensemble-based approach for predicting text prompts used to generate Stable Diffusion images.
- Surpassed the performance of traditional image captioning models by employing fine-tuned CLIP and ViT models and using a custom dataset of 105,000 image-prompt pairs.

[Competition, Computer Vision Course 2022]
Visual Odometry: Mapping Out the Camera Path | Code
- 3rd place in CS 585 Computer Vision class challenge, focused on estimating the camera path by recovering relative motion between successive frames.

[Final Project, Deep Learning Course 2022]
Crypto of the Future: Reinforcement Learning | Code
- DL reinforcement algorithm — proximal policy optimization — to devise an automatically generating strategy for Ethereum transactions.

Undergraduate Research

UCLA Department of MIMG — Los Angeles, CA
Undergraduate Researcher, Characterization of Novel Bacteriophages — *Sep 2014 – Jun 2015*
- Worked with **Dr. Giorgia Pirino** to advance phage therapy research in the SEA-PHAGES project by isolating a novel bacteriophage: PH8s.
- Probed potential gene functions via electron microscopy and plaque assays, leading to a fully annotated genome added to the NCBI GenBank database.
- Poster presentation at the UCLA MIMG Symposium on Characterization of Novel Bacteriophage PH8s.

UCLA Department of Psychology — Los Angeles, CA
Undergraduate Researcher, Directed Research in Medicine — *Jun 2014 – Aug 2015*
- Conducted research with **Dr. Thomas Minor** for senior project by using learned helplessness to model symptoms of Post-Traumatic Stress Disorder.

Skills

Programming & Technologies: Python (PyTorch, jax, transformers, diffusers, TensorFlow, NumPy, Pandas, scikit-learn), OpenCV, Lambda Cloud, RunPod, Git/GitHub, AWS, Hugging Face Hub (spaces, datasets, models)

ML/AI Techniques: multimodal pretraining and post training, diffusion, LLM instruction tuning, LoRA tuning, large-scale data collection and refinement, data augmentation, ML pipeline deployment, open-source models and datasets