Andrew Lizarraga

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ACADEMICS

University of California, Los Angeles (UCLA)
Ph.D. Statistics — Sep 2022 – Jun 2026

University of California, Santa Barbara (UCSB)
B.S. Mathematics — Sep 2014 – Jun 2018

SKILLS

Python, C++, CUDA, PyTorch, Git, Linux, AI/ML, Generative AI, Statistics

EXPERIENCE

Graduate Research Fellow - UCLA — Sep 2022 – Present

- Built end-to-end Python/C++ ML infrastructure for diffusion/transformer models (data ingestion, distributed training, evaluation), supporting 1M+ images, 10–20 TB of data, and reducing experiment setup time by 40%.
- Optimized CUDA kernels and GPU training loops, profiling memory and latency with nsight/nvprof, improving core model throughput by 1.6-2.3x on high-dimensional imaging workloads.
- Designed statistical modeling and large-scale data analysis pipelines used across 25+ publications in AI, statistics, astronomy, and medical imaging; processed 500k+ scientific images with automated validation.

Staff Researcher - UCLA Brain Mapping Center — Jul 2021 – Sep 2022

- Built Python/C++ neuroimaging pipelines for fMRI/DTI/MRI, processing 50k+ scans and 5–10 TB of data via automated QC and HPC scaling.
- Optimized GPU segmentation and diffusion models, improving 3D imaging performance by 1.7-2.2x through CUDA kernel and memory profiling.
- Designed reproducible ML infrastructure for evaluation and statistical validation, cutting analysis time by 35%.
- Developed inference and statistical tools supporting clinical neurodegeneration research, integrating results into production clinical workflows.

AdClick Data Scientist - Recruitics (Formerly KRT) — Nov 2018 – Jun 2021

- Built production-grade analytics pipelines in Python and SQL to process tens of millions of advertising impression and click records, supporting performance optimization for large recruitment-marketing campaigns.
- Developed statistical models and A/B evaluation frameworks to measure click-through rates, bidding efficiency, traffic quality, and multi-channel attribution.
- Automated data ingestion, transformation, and reporting workflows, improving latency and reliability of dashboards used by product and marketing teams.
- Partnered with engineering teams to debug data-quality issues, optimize ETL performance, and validate metrics against backend advertising systems.

AWARDS

National Science Foundation - Graduate Research Fellowship — Sep 2023 – Jun 2026
UCLA Gene Block Merit Award — Sep 2022 – Jun 2023
UCLA Graduate Summer Research Fellowship — Jun 2022 – Sep 2022

SELECTED PUBLICATIONS

- **Andrew Lizarraga**, Eric Hanchen Jiang Jacob Nowack, Morgan Himes, Jonathan Soriano, Yun Qi Li, Ying Nian Wu, Bernie Boscoe, Tuan Do. *Modeling Galaxy Morphology Evolution Through Cosmic Time via Redshift Conditioned Diffusion Models* | *(In Review) - Astrophysical Journal*
- **Andrew Lizarraga**, Eric Hanchen Jiang, Jacob Nowack, Yun Qi Li, Ying Nian Wu, Bernie Boscoe, Tuan Do. *Learning the Evolution of Physical Structure of Galaxies via Diffusion Models* | *Neurips-MLP4S 2024*
- **Andrew Lizarraga**, Edouardo Honig, Ying Nian Wu. *From Stochastic Parrots to Digital Intelligence* | WIRES Computational Statistics 2025
- **Andrew Lizarraga**, David Lee, Antoni Kubicki, Ashish Sahib, Elvis Nunez, Katherine Narr, Shantanu H. Joshi. *Alignment of Tractography Streamlines Using Deformation Transfer via Parallel Transport* | *MICCAI - CDMRI 2021*
- **Andrew Lizarraga**, Brandon Taraku, Edouardo Honig, Ying Nian Wu, Shantanu H. Joshi. *Differentiable VQ-VAE's for Robust White Matter Streamline Encodings* | *IEEE - ISBI 2024*
- **Andrew Lizarraga**, Katherine L. Narr, Kirsten A. Donald, Shantanu H. Joshi. *StreamNet: A WAE for White Matter Streamline Analysis* | *PMLR - GeoMedIA 2022*
- Edouardo Honig, **Andrew Lizarraga**, Zijun Frank Zhang, Ying Nian Wu. *Better Prompt Compression Without Multi-Layer Perceptrons* | *Neurips-AFM 2025*
- Elvis Nunez, **Andrew Lizarraga**, Shantanu H. Joshi. *SrvfNet: A Generative Network for Unsupervised Multiple Diffeomorphic Functional Alignment* | *CVPR - DiffCVML 2021*
- Morgan Himes, Samiksha Krishnamurthy, **Andrew Lizarraga**, Srinath Saikrishnan, Vikram Seenivasan, Jonathan Soriano, Ying Nian Wu, Tuan Do *Multi-Modal Masked Autoencoders for Learning Image-Spectrum Associations for Galaxy Evolution and Cosmology* | *Neurips-MLP4S 2025*
- Vikram Seenivasan, Srinath Saikrishnan, **Andrew Lizarraga**, Jonathan Soriano, Bernie Boscoe, Tuan Do *Combining datasets with different ground truths using Low-Rank Adaptation to generalize image-based CNN models for photometric redshift prediction* | *Neurips-MLP4S 2025*
- Eric Hanchen Jiang, Yasi Zhang, Zhi Zhang, Yixin Wan, **Andrew Lizarraga**, Shufan Li, Ying Nian Wu *Unlocking the Potential of Text-to-Image Diffusion with PAC-Bayesian Theory* | *(In Review) ICLR 2026*
- Donghun Noh, Deqian Kong, Minglu Zhao, **Andrew Lizarraga**, Jianwen Xie, Ying Nian Wu, Dennis Hong. *Latent Adaptive Planner for Dynamic Manipulation* | CoRL 2025
- Jinxing Li, Jacob Bortnik, Qiushuo Wang, Yingnian Wu, **Andrew Lizarraga**, Mirana Angel, Beibei Wang, Qianzhuang Wen, Jeffrey Jiang *Modeling ring current proton distribution using MLP, CNN, LSTM, and transformer networks* | Frontiers in Astronomy and Space Sciences
- Deqian Kong, Dehong Xu, Minglu Zhao, Bo Pang, Jianwen Xie, **Andrew Lizarraga**, Yuhao Huang, Sirui Xie, Ying Nian Wu. *Latent Plan Transformer: Planning as Latent Variable Inference* | *NeurIPS 2024*
- Jie Ren, Xinhao Zheng, Jiyu Liu, **Andrew Lizarraga**, Ying Nian Wu, Liang Lin, Quanshi Zhang. *Monitoring Primitive Interactions During the Training of DNNs* | *AAAI 2025*