

Andrew Lizarraga

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SKILLS	Python, C++, CUDA, PyTorch, SQL, Git, Linux, AI/ML, Generative AI, Statistics	
EXPERIENCE	Research Fellow - UCLA <ul style="list-style-type: none">– 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.	Sep 2022 – Present
	Staff Researcher - UCLA Brain Mapping Center <ul style="list-style-type: none">– 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.	Jul 2021 – Sep 2024
	AdClick Data Scientist - Recruitics (Formerly KRT) <ul style="list-style-type: none">– 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.	Nov 2018 – Jun 2021
AWARDS	National Science Foundation - Graduate Research Fellowship UCLA Gene Block Merit Award UCLA Graduate Summer Research Fellowship	Sep 2023 – Jun 2026 Sep 2022 – Jun 2023 Jun 2022 – Sep 2022
ACADEMICS	University of California, Los Angeles (UCLA) C.Phil Statistics (Machine Learning and AI focus) University of California, Santa Barbara (UCSB) B.S. Mathematics	Sep 2022 – Dec 2025 Sep 2014 – Jun 2018

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*