Nicole Lai-Lopez MDS

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Education

University of British Columbia — Vancouver, BC, Canada
Master's in Data Science - Computational Linguistics — 2024 - 2025

- Advisor: Prof. Scott Mackie
- Research area: Natural Language Processing, Parsing
- GPA: 3.9/4.0
- Relevant Coursework: Advanced Corpus Linguistics, NLP Research, Statistical Inference, Machine Learning, Deep Learning, Hypothesis Testing, Experimental Design, Transformer Interpretability

University of California, San Diego — San Diego, CA, USA
B.S. in Cognitive & Behavioral Neuroscience — 2017 - 2021

- Minors: Human-computer Interaction Design, Literature/Writing
- GPA: 3.6/4.0 *Provost Honors (2018-2021)*
- Relevant Coursework: Linear Algebra, Programming in Java, R, Prototyping, Usability & Information Architecture, Judgement & Decision-Making

Projects

moo4feed, R Package Contributor | UBC, Animal Welfare Lab — 2025.04 - 2025.07

- moo4feed is an R package designed to extract novel individual-level traits from raw feeding and drinking data collected through precision livestock farming systems. The package aims to support animal welfare research and data-driven monitoring by enabling reproducible, scalable analysis workflows.

fwi-predict, Python Package Contributor | Fish Welfare Initiative — 2025.03

- fwi-predict is a Python package for predicting water quality parameters in aquaculture ponds.

Global Risk and AI Safety Preparedness (GRASP) Contributor | Mohammed Bin Rashid School of Government & Future of Life Institute — 2025.01 - 2025.02

- A comprehensive mapping of tools, policies and technologies for policymakers, researchers, and industry leaders seeking to understand ongoing AI risks and proposed solutions.

Research

SLIME Lab | University of British Columbia, Canada — 2025.04 - Present

- Supervisor: Professor Jian Zhu
- Mechanistic Interpretability in speech-capable LLMs.
- Develop structured ablation experiments across speech/text inputs.
- Apply activation-patching and neuron-level interventions to trace hallucinations in speech-enabled LLMs
- **Topics:** Speech and LLM Interpretability, activation patching, hallucinations, TransformerLens.

Human-AI Interaction Lab | University of British Columbia, Canada — 2024.10 - Present

- Supervisor: Professor Cristina Conati
- Trained deep CNN-GRU models & optimized attention mechanisms, boosting accuracy by 12% over baseline.
- Designed transformer-based model architecture to predict user cognitive traits via raw eye-tracking data.
- **Topics:** deep learning, eye-tracking, RNN-CNN model design, Transformer-based architecture design, human-computer interaction, XAI

Publications

1. **Nicole Lai-Lopez**, Lusha Wang, Su Yuan, Lisa Zhang. Lexicon-Guided Detoxification and Classifier-Gated Rewriting: A PAN 2025 Submission. *CLEF 2024: Conference and Labs of the Evaluation Forum*, 2025.

Industry

Boeing, Vancouver | Machine Learning Research Engineer 2025.04 - 2024.07

- Built 90% accuracy NLP pipeline extracting structured data from aviation data.
- Designed hybrid LLM and rule-based post-processing, reducing manual processing time by 75%.
- Standardized aviation log schemas, improving cross-team analytics & reporting.

Dexcom, San Diego | UX Content Designer, Computational Linguist 2022.09 - 2024.08

- Built English source file using Python + spaCy to normalize syntax and cut inconsistencies across 6 + Dexcom products.
- Led CMS single-source rollout, reducing translation costs by 15-20%.
- Used rule-based parsing to decentralize authoring & speed localization in 20+ regions.

NOAA - Fisheries, California | Machine Learning Research Engineer 2023.06 - 2024.09

- Partnered with scientists, graphic designers, animators and fisheries experts to create accurate, engaging messaging.
- Developed robust content strategy, achieving 500k+ increase in monthly interactions.

Dovenmuehle Mortgage, San Francisco | Lead Content Designer 2021.08 - 2022.09

- Built content design system for the company from scratch.
- Analyzed 200k+ transcripts from customer service for feature prioritization and UX.

Awards and Honors

- **Academic Scholarship - *4,100 CAD***, University of British Columbia 2025
- **Academic Scholarship - *17,500 USD***, UC San Diego 2025
- **Academic Scholarship - *15,000 USD***, UC San Diego 2024
- **First Place Achievement Scholarship - *4,000 USD Annual Stipend + Full-tuition***, St. Mary's School, Panama 2015 - 2017
- **Physics Olympiad National Gold Medalist, first place**, Panama 2015
- **Math Olympiad National Finalist**, Panama 2013

Skills

Languages: Spanish & English (Native), German, Italian & French (B2).

Programming: Python (PyTorch, Pandas, NumPy, scikit-learn, matplotlib, TransformerLens, PyTorch, TensorFlow), R (tidyverse, gg- plot2), Bash Shell, JavaScript, HTML/CSS, SQL, C, Java.

Tools & Platforms: Git, GitHub, AWS, Google Colab, Cedar HPC, Apptainer, Streamlit, Docker, Plotly, Tableau, Matplotlib, Hugging Face, OpenAI API

Interests

Sports: Triathlon (half-ironman + olympic distance), scuba diving (scuba instructor), multi-day backpacking, rock climbing, snowboarding, yoga (yoga instructor), salsa and tango dancing, martial arts

Hobbies: Language learning, reading, writing, seaweed collecting, underwater videography, documentary filmmaking, video editing, vegan/vegetarian cooking, solo-traveling