

Karan K. Mohindroo

Boston, MA | (203) 682-5528 | January – June 2027 | karan@karankm.com | karankm.com
linkedin.com/in/karankmohindroo | github.com/NullPointerDepressiveDisorder

EDUCATION

Northeastern University, Khoury College of Computer Sciences

Boston, MA

Candidate For Bachelor of Computer Science and Behavioral Neuroscience

Expected May 2029

Relevant Courses: Algorithms & Data, Introduction to Databases, Program Design and Implementation

GPA: 3.0/4.0

SKILLS & INTERESTS

Languages: Python, Java, Swift, SQL (MySQL), JavaScript, HTML/CSS, C/C++, Bash

Frameworks: pytest, MLX, SwiftUI, AppKit, React, Node.js, Flask, FastAPI

Developer Tools: Git, GitHub Actions, Xcode, uv, Ruff, mypy, Homebrew

Libraries: pandas, PyTorch, NumPy, Matplotlib, Hugging Face Transformers, SciPy, scikit-learn

Interests: Hardware tinkering, Pastry and dessert baking, Learning TIG welding, Broadway musicals

EXPERIENCE

Research Intern

June 2024 – October 2024

UC Santa Cruz

Santa Cruz, CA

- Benchmarked CALID, an LLM inference system that uses a confidence-based "filter decoding" method to cut computation costs by routing easy predictions to a small draft model and hard ones to a large model.
- Co-authored and presented the [research abstract](#) at the BayLearn 2024 Symposium, hosted at Apple.
- Showed that routing up to 48% of requests to Llama 2 7B instead of Llama 2 70B had minimal impact on output quality (perplexity).

PROJECTS

infer-check | *Python, MLX, asyncio, mypy, pytest*

Feb 2026 – Present

- Built a CLI and library that compares model outputs across quantization levels and inference backends (MLX plus HTTP-served engines) to surface correctness regressions that standard benchmarks miss.
- Implemented teacher-forced KL divergence scoring with chunked forward passes, comparing token distributions on shared context rather than after outputs diverge.
- Derived a prefix-KL fallback and a binned lower bound for backends without full logit access.
- Engineered a typed backend protocol unifying four inference adapters, with normalized finish reasons, token-level metadata, and stable prompt IDs for reproducible cross-run comparison.
- Published a beta release on PyPI, fully typed under mypy --strict, with a pytest suite and pre-commit checks (ruff, bandit).

MiddleDrag | *Swift, SwiftUI, AppKit, GitHub Actions*

Dec 2025 – Present

- Coded and shipped MiddleDrag, an open-source macOS menu bar app that adds three-finger middle-click and middle-drag to Mac trackpads.
- Distributed releases through Homebrew Cask, MacPorts, and signed .pkg releases, with 6k+ downloads and 236 GitHub stars.
- Integrated Apple's private MultitouchSupport framework to read raw touch data before the system gesture recognizer sees it.
- Synthesized middle-mouse events are synthesized with CGEventTap and the Accessibility APIs, so Mission Control and other system gestures keep working.
- Designed a modular, protocol-oriented architecture with dependency injection and mock devices, backed by unit tests across 17 test files with 81% coverage tracked in Codecov.