Karan Sharma

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Education

University of Michigan Ann Arbor, MI
B.S. Computer Science *Expected May 2028*
Coursework: Data Structures & Algorithms (C++), Computer Architecture (C), Foundations of CS
Honors: William J. Branstrom Prize (top 5% of first-year class); University Honors (2024, 2025)

Experience

Software Engineering Intern May 2026 – Aug 2026
Visa Inc., VCA GenAI Hub *Austin, TX*

- Built Node.js evaluation services for **22 LLM agents**, with MongoDB run storage and a React review UI.
- Implemented DeepEval checks and GPT/Claude/Gemini judges across a **199-metric evaluation catalog**.
- Coordinated workers with MongoDB leases and a semaphore limiting **LLM-judge concurrency to 24**.
- Turned production failures into CI regression tests and gated agent releases on two-reviewer approval.

Software Engineering Intern Jun 2025 – Aug 2025
Gallagher Kaiser *Troy, MI*

- Exposed PLC telemetry through **12+ FastAPI endpoints**, with a React dashboard and Prometheus alerts.
- Automated Docker deployments, cutting production-line setup from **about 4 hours to under 30 minutes**.
- Added PyTest and Playwright tests to Jenkins CI, reaching **85%+ coverage** and catching **15+ regressions**.

Projects

MacroSquad (Social Nutrition App) | *React Native, TypeScript, PostgreSQL*

- Shipped a React Native nutrition app to the **App Store**, backed by Cloudflare Workers and Supabase.
- Made offline meal retries idempotent with persistent request IDs and PostgreSQL uniqueness constraints.
- Enforced PostgreSQL row-level policies to restrict private-profile access to authorized users.

Whelp (AI Puppy Training Coach) | *TypeScript, React Native, Claude*

- Sampled puppy videos into frame pairs **0.6 seconds apart** to preserve motion cues for Claude.
- Generated **14-day training plans** from behavior classifications and validated model outputs with Zod.
- Built a **two-stage Claude vision pipeline** for behavior routing and frame-by-frame body-language analysis.

wxbot (Prediction-Market Paper Trading) | *Python, FastAPI, PostgreSQL, Redis*

- Built an asyncio engine for Kalshi with **21 strategies**, WebSocket feeds, and **11 order risk checks**.
- Persisted order-state transitions in PostgreSQL; used unique client order IDs for crash-safe retries.
- Automated daily audits to retire strategies with a nonpositive **90% lower confidence bound on profit**.

Lemma (iPad Notes Workspace) | *SwiftUI, PencilKit, PDFKit, SQLite*

- Integrated PencilKit, PDFKit, and a Markdown/LaTeX editor in a modular SwiftUI workspace.
- Implemented atomic file replacement and shared document sessions to coordinate saves across editor panes.
- Built SQLite full-text search with serialized database access and cached prepared statements.

Technical Skills

Languages: C++, Python, TypeScript, JavaScript, SQL, C, Go, Java, Kotlin, Swift
Frameworks & Data: Node.js, React, React Native, FastAPI, PostgreSQL, MongoDB, Redis, SQLite
Cloud Computing: Google Cloud Platform (GCP), Cloudflare Workers, Docker, Linux, CI/CD
AI & ML: Generative AI, large language models, RAG, applied machine learning, ML systems
Evaluation & Testing: DeepEval, PyTest, Playwright, performance analysis/evaluation