Kaavin Newatia

kaavinsn@gmail.com | linkedin.com/in/kaavin-newatia | github.com/kaavin-forml | Birmingham, MI

Education

Purdue University, College of Science — West Lafayette, IN

B.S. Computer Science, B.S. Pure Mathematics (Honors), B.S. Pure Physics; GPA: 3.93/4.00 — *Expected May 2028*

- Pursuing the Quantum Information Science and Technology Certificate; also an independent math, CS, and physics tutor.
- **Coursework:** Artificial Intelligence, Analysis of Algorithms, Programming in C, Calculus 3, Data Structures & Algorithms (C++), Systems Programming (C, x86/ARM), OOP (Java), Statistical Methods (R), Linear Algebra I/II (Honors), Differential Equations (Honors), Discrete Mathematics, Abstract Algebra (Honors), Real Analysis (Honors), Putnam Problem Solving, Quantum Mechanics, QM Lab, Quantum Computing/QIS, Mathematical Methods of Physics, Advanced Mechanics

Experience

forml — Sept 2026 – Present

Software Engineer — *San Mateo, CA; New York, NY*

- Building the background verification pipeline for lending operations that aggregates sanctions, enforcement, court, and public record data on loan applicants, evaluating each data source for API access versus compliant web scraping, normalizing all results into a single applicant level schema, and surfacing all flagged findings directly in each applicant's underwriting file.
- Ship production features across forml's agentic lending platform: scheduled jobs with Celery beat, caching and task queues backed by Redis, Flask services served behind Gunicorn, request and response validation with Pydantic, schema migrations with Alembic, and data modeling in PostgreSQL, owning every feature end to end from schema design through deployment.
- Built a broker facing dashboard for tracking and managing client referrals to Ramp, giving brokers real time status on every referral they submit, and led the partnership meetings with Ramp's team that defined the referral flow and the integration.

Ford Motor Company — May 2026 – Aug 2026

Software Engineering Intern — *Dearborn, MI*

- Developed a LightGBM classification model flagging high risk SKUs in Ford's service parts demand forecasting pipeline, reaching 72% accuracy across 4 risk categories on an 80/20 holdout split with a training set of only 700 labeled data points.
- Paired the model with SHAP analysis for per feature explainability of each flag and an LLM chat interface built on Google ADK, letting analysts query the model's predictions and the underlying service parts data interactively in natural language.
- Refactored data models in Google Cloud and wrote the canonical SQL queries and views for service parts data, adopted by 100+ users across enterprise technology as the standard access path and replacing scattered, duplicated ad hoc query logic.
- Built agentic AI workflows used daily by 30+ software engineers, writing OpenCode agent configs for cloud data exploration, query generation, and code review that standardized prompts and tool access across teams while cutting per task token costs.

International Research Institute of North Carolina — 2022 – 2023

Research Student, Consensus Algorithms (w/ Dr. Robert Malkin, Duke University) — *Durham, NC*

- Researched the security of Proof of Stake consensus algorithms, surveying known attack vectors across major blockchain implementations and consolidating these findings into a formal literature review presented to the institute's research group.
- Highlighted PoS susceptibility to Denial of Service attacks and the need for far stronger DDoS mitigation, and proposed independently designed consensus systems that reduce the energy consumption and complexity of cryptocurrency mining.

Projects

Bag of Words Classifier & Queue Server | *C++, SQL, REST API* — 2024 – Present

- With a University of Michigan graduate, built a Bag of Words statistical model in C++ on custom dynamic data structures that automatically tags posts by subject from their text, with the full training and inference pipeline written from scratch.
- Built an online waiting queue server in C++ with SQL persistence and a REST API, storing the live queue in a dynamically allocated linked list so clients can join, poll their current position, and leave without forcing a full resync of the queue state.

Gamified Habit Tracking iOS App | *Swift, Firebase Realtime Database* — 2024 – Present

- Built an iOS app that gamifies habit building with streaks, head to head competitions, and a social feed for posting achievements; load tested with 30+ concurrent users and designed its NoSQL backend to sustain that load at near zero cost.

Purdue BLRS (VEXU Robotics) | *C++, Autonomous Control* — 2024 – Present

- Software engineer on a top 3 VEXU team, developing pure pursuit tracking and other autonomous routines for competition robots, building on 7 years of VEX programming and six VEX Worlds qualifications as a programming and controls lead.

Technical Skills

Languages: Python, C/C++, SQL, Swift, Java, Lua, Bash, x86/ARM Assembly, R. **Frameworks & Tools**: Flask, Gunicorn, Celery, Pydantic, Alembic, TensorFlow, PyTorch, LightGBM, Google ADK, LangChain, OpenCode, Git/GitHub, Linux/UNIX. **Cloud & Databases**: PostgreSQL, Redis, Google Cloud, Firebase (Realtime Database), Supabase, SQL and NoSQL modeling.