

Prince Kumar

512-529-0390 | princekmr11@tamu.edu | [linkedin.com/in/princekumar](https://www.linkedin.com/in/princekumar) | github.com/Kumario1

EDUCATION

Texas AM University

College Station, TX

Bachelor of Science in Computer Science, Craig and Galen Brown Engineering Honors

Expected May 2028

- **GPA:** 3.83/4.0
- Relevant Coursework: Data Structure and Algorithms, Computer Organization, Object-Oriented Programming, Discrete Math, Program Design and Concepts, Linear Algebra

TECHNICAL SKILLS

Python, TypeScript, JavaScript, C/C++, Java, SQL, HTML/CSS, React, React Native, Node.js, Flask, FastAPI, PyTorch, torchvision, TensorBoard, XGBoost, pandas, scikit-learn, NumPy, Matplotlib, Docker, AWS, GCP, Firebase, Supabase, Git, GitHub Actions, MCP, WebSockets, SQLite

EXPERIENCE

Finch (ApplyEasy)

Jan. 2026 – Present

Full-Stack Developer

College Station, TX

- Built and deployed a five-repo SaaS—React frontend on Cloudflare, Python/Flask/LangChain backend, Manifest V3 Chrome extension, and Python CLI—on AWS EC2 with nginx, SSL, and GitHub Actions CI/CD.
- Rebuilt job-matching from a single boolean LLM gate into deterministic pre-filtering plus weighted LLM scoring with caching over a 100+ jobs/day n8n + Apify scraper, splitting generation across Claude Sonnet and GPT-4o to cut cost.
- Shipped a Discord analytics bot on Cloudflare Workers—Ed25519-verified slash commands plus daily PostHog digests—that automated a 5-stage activation funnel and surfaced a 90% drop-off at the enrichment-to-search step (86 to 1 users over 14 days).
- Added AI-ranked GitHub-profile enrichment through OpenRouter/DeepSeek models, cached once per user to skip recomputation on re-enrichment.

Maroon Fund

Jan. 2026 – Present

Quantitative Developer

College Station, TX

- Built XGBoost buy-the-dip and sell-at-peak classifiers and unified AMZN/NVDA/META pipelines for a student-managed quant fund with \$70K+ AUM.
- Engineered stationary dip-detection features (RSI, VIX, Ulcer Index, volatility z-scores) with TimeSeriesSplit and GridSearchCV.
- Backtested per-ticker models on Sharpe, drawdown, and equity curves; AMZN/NVDA/META returned 107%/300%/121% vs. buy-and-hold 46%/179%/38%.
- Fixed sell-side feature leakage and non-stationary inputs (ROC AUC 0.64 to 0.97); rebuilt META with walk-forward validation (+429% vs. +189% buy-and-hold).

PROJECTS

grocerAlgo — Python, FastAPI, NumPy, SciPy, scikit-image, OpenCV, Playwright

July 2026

- Built a grocery-route optimizer that turns a shopping list into the shortest entrance-to-checkout walk on a store's real floor plan (BFS distances on an occupancy grid + exact Held-Karp fixed-endpoint TSP, falling back to nearest-neighbor with 2-opt beyond 18 stops)—48% shorter than list order (818m to 426m on a 25-item pilot), re-solving in 216 ms on every list edit.
- Extracted store geometry from guide PDFs with a computer-vision pipeline—PyMuPDF vector parsing with an OpenCV raster/OCR fallback for scanned maps, rasterized walkable-floor grids, and medial-axis skeletonization into aisle corridor graphs—then calibrated each store's live shelf data onto its guide via consensus search over aisle correspondences, landing 99.4–100% of shelf positions on walkable floor.
- Compressed store onboarding to one command: a six-stage idempotent pipeline (guide discovery/validation, extraction, QA) that dispatches a headless coding agent to iterate the map to convergence and a separate adversarial audit agent that ships only on a clean verdict; parallelized via git worktrees toward a 380-store fleet, with 7 onboarded and 92% of items auto-located.

- SkinScan** — Python, PyTorch, Mask R-CNN, YOLOv8, EfficientNet, MediaPipe, FastAPI July 2026
- Built a skin-analysis pipeline serving 1024px face tiles to an SA-RPN Mask R-CNN service (mAP@0.50 = 0.499, recall 0.743 on AcneSCU) with MediaPipe region mapping and ITA tone estimation.
 - Ran a 756-lesion A/B locking tile serving over zoom (recall 0.70 vs. 0.04); superseded a YOLOv8m + EfficientNetB0 baseline (F1 0.722, 91.2% acc).
 - Shipped a rule-based product recommender over 8k Sephora products / 1.1M reviews; Bayesian ranker beat learned HistGB 0.609 vs. 0.584.
- Southwest Airlines Spoilage Model** (1st Place, TAMU ML Club Competition) — Python, scikit-learn, pandas July 2026
- Won 1st place building a calibrated 3-class model predicting crew-sequence spoilage pre-departure (auc_spoil 0.822, PR-AUC 0.714 vs. 0.27 base rate).
 - Enforced time-honesty via leakage audits, a time-based split with TimeSeriesSplit CV, and pre-departure-only features from 57k versioned snapshots.
 - Blended HistGB + random-forest probabilities with churn and last-snapshot features, lifting auc_spoil 0.768 to 0.822 and auc_severity to 0.963.
- Synapse** — TypeScript, Node.js, WebSockets, SQLite, Docker, MCP, tree-sitter June 2026
- Built and published [@kumario/synapse](#), a realtime coordination layer for coding-agent teams—a polyglot TypeScript/JS/Python/Go npm package (CLI, WebSocket daemon, 4 shared packages).
 - Designed a deterministic contract-conflict engine, closing a time-of-check-to-time-of-use race via single-round-trip peer locks and benchmarking its 7 rules on a 25-scenario precision/recall corpus.
 - Decomposed a 3,100-line CLI monolith into a 119-line dispatcher; added Python/Go tree-sitter sidecars, stdio MCP tools, Redis fan-out, and a warm-cached SQLite/Postgres StateStore.
- SentinelDev** — TypeScript, Node.js, MCP, GitHub Actions, LLM Agents, AST June 2026
- Built an autonomous TypeScript/Node.js agent that polls GitHub issues across watched repos and dispatches Cursor agents to patch code and open PRs.
 - Implemented three pluggable fix engines (in-repo LLM with TS-compiler AST + test runner, @cursor mentions, Poke-driven Cursor VMs) behind a stdio MCP server for human-in-the-loop approve/decline/instruct control.
 - Shipped GitHub Actions workflows for Sentinel-Fix label triggers and PR-approval dispatch, with zero-config auth via the GitHub CLI.
- Open Source: headroom** (chopratejas) — Python, LLM Proxy, Anthropic & Copilot APIs June 2026
- Hardened an LLM proxy (41k stars, 2.8k forks) that cuts token usage 60–95%—exposed savings-rate, cache-hit, and per-model KPIs as JSON/CSV for CI token-regression gating and normalized ANSI-styled Anthropic model IDs across three proxy paths (merged upstream).
- Open Source: ECC** (affaan-m) — Node.js, Agent Harness, Security June 2026
- On a 219k-star agent harness (34k forks), eliminated a credential-leak vector by routing API tokens out of curl argv into stdin config across the Jira and SocialClaw skills, and added a CI guard blocking regressions (merged upstream).
- Open Source: CloakBrowser** (CloakHQ) — Python, Playwright, Anti-Bot June 2026
- On a 27k-star stealth browser (2.1k forks), bounded server memory with an idle-cleanup timer that reaps per-seed Chrome processes after the last CDP disconnect, and hardened post-scroll click targeting against moving elements.
- Open Source: hermes-agent** (NousResearch) — Python, LLM Agent June 2026
- Patched cross-platform breakage in NousResearch’s 198k-star agent (35k forks): a Windows-to-WSL cwd translator for terminal and file tools, plus session-origin persistence in `state.db` so gateway sessions survive restarts.
- Open Source: akash-chat** (Akash Network) — TypeScript, Vision AI Mar 2025
- Prototyped multimodal chat attachments that route uploaded images through Vision AI into the LLM.
- Xcopilot** — Google Cloud Platform, Gemini Flash, Fine-Tuning, NLP March 2025
- Fine-tuned Gemini Flash on Google Cloud to generate tweets that mirror a user’s tone, style, and vocabulary from their post history.
 - Trained on a Trump-tweet corpus to capture stylistic patterns, iterating on fine-tuning and evaluation to lift output relevance.
- High Freq Arbitrage Trading Bot** — C++20, WebSockets, API, Low-Latency Systems Jan 2026

- Built a C++20 high-frequency arbitrage bot across the Polymarket and Kalshi prediction markets, with a three-thread feed/strategy model, lock-free structures, and a pre-allocated market-data slab.
- Cut per-order latency by pooling TLS connections—eliminating a 20–50 ms handshake per order—and moved logging to an async ring buffer off the hot path; instrumented nanosecond p50/p99/p999 latency histograms per segment.

TAMUSkate — React Native, Supabase, Google Auth, RN Maps, Geolocation, AI Safety Oct 2025

- Built a campus social app for Texas A&M skaters (Snapchat-style) with authenticated posts, short videos, and location-based discovery.
- Shipped Google OAuth and a Supabase backend (profiles, media storage, feeds, spot metadata) plus an RN Maps view with real-time geolocation “hot spot” heat zones.
- Added an AI safety check that analyzes uploaded spot photos to flag hazards and estimate skateability before a visit.

ShivChat App — React Native, TypeScript, CSS, AWS, ElevenLabs API, Prompt Engineering May - Aug 2025

- Built a React Native app using the ElevenLabs API for voice conversations with AI personas of different deities.
- Engineered distinct, tradition-aligned personalities through prompt engineering; deployed the backend on AWS.

PiPartner | iOS, OpenAI, OCR, APIs, AWS, Fine-Tuning, CSS June 2024

- Built an AI math-tutor iOS app (400+ downloads, 5-star rating) that solves text and image problems via OCR and OpenAI models.
- Adopted by math educators for classroom use, delivering instant step-by-step solutions from a photo.

Eclipse Hackathon on Devpost | Streamlit, Pandas, NumPy, scikit-learn, Matplotlib, CSS, JavaScript Nov 2024

- Built a Streamlit carbon-footprint calculator processing user data with Pandas, NumPy, and scikit-learn to estimate emissions and recommend actions.
- Designed Matplotlib visualizations breaking down emission sources, with carbon-offset donation features in custom CSS/JS.