

Pranoy Mukherjee

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Education & Certifications

McMaster University

Bachelor of Engineering, Computer Engineering

Hamilton, ON

Expected April 2028

- **GPA: 3.8/4.0; Top 10%** standing in program
- **Certifications:** IBM Full Stack Software Developer (IBM); **Software Engineering Job Simulation** (JPMorganChase, Forage); Claude in Amazon Bedrock (Anthropic)

Technical Skills

- **Languages & Querying:** Python, SQL (joins, window functions, migrations), TypeScript, JavaScript, C, C++, Solidity, Verilog
- **Data & Analytics:** Data analysis, ETL / data pipelines, data validation & quality checks, funnel & conversion tracking, statistical analysis, dashboards & data visualization, Excel, PowerPoint
- **Databases & Machine Learning:** PostgreSQL, Supabase, Redis, Pinecone (vector); **Generative AI** (Claude, OpenAI, Copilot), **RAG**, embeddings, NLP, supervised/unsupervised learning, MLP classifiers, anomaly & fraud detection
- **QA, Automation & Cloud:** Pytest, Playwright, test plan design, **automated regression testing**, CI/CD (GitHub Actions), Git/GitHub, AWS (ECS, S3, RDS, SQS), GCP, Terraform

Experience

Finavator

May 2026 – Aug 2026

AI Engineer Intern

Toronto, ON

- Built **operational dashboards** in Python/FastAPI tracking **usage patterns**, **quality metrics**, and per-model cost across **4 AI workflows**, replacing manual spot-checks with one prioritization view
- Engineered a **retrieval-augmented generation (RAG)** pipeline over a **Pinecone** vector index that deduplicates evidence and **blocks unsupported source IDs**, so every factual claim ships with a verifiable citation
- Modeled a human-in-the-loop review lifecycle in **PostgreSQL/Supabase** with immutable revisions and **row-level security**, producing a queryable **audit trail** of every edit, approval, and export
- Validated the platform with **540+ backend tests** and **70 Playwright end-to-end tests** across three viewports, gated behind lint and type checks on every deploy

Maboko Cash

Feb 2026 – May 2026

Full Stack Developer

Remote

- Built a referral and reward engine with **end-to-end funnel tracking** from signup to first transaction to wallet credit, giving admins **conversion visibility**, **fraud review** queues, and payout controls
- Delivered **6 feature phases** and **20+ releases** across wallets, QR payments, marketplace, and support, and applied **2 production database migrations** aligning the schema with the expanded architecture
- Shipped **admin dashboards** and real-time support tooling (conversation history, WebSocket messaging, unread tracking), consolidating scattered channels into one measurable queue

Tradexim

July 2026 – Aug 2026

Blockchain Engineer (Part-Time)

Remote

- Directed development of **AI-based compliance checks** for **KYC** name-mismatch and listing-photo fraud detection, **flagging suspicious activity** for review before settlement on a tokenized trade-finance platform
- Ran **systematic production test plans** across the transaction lifecycle (KYC, tokenization, escrow, revenue distribution, resale), catching **6 of 12 backend functions that had never deployed** and a live test-bypass control missed by code review
- Built **audit logging** capturing every privileged admin action by timestamp, actor, and target; compared **5 cloud providers** on pricing to inform the hosting decision; deployed **8 Solidity contracts** via **Terraform**

Projects

Cortex Lab

Python, FastAPI, PostgreSQL, Celery, AWS, Terraform, Next.js

Cloud-deployed neuroscience research & ML analysis platform



- Shipped a versioned **8-state cognitive-state classifier (MLP)** and a **representational similarity analysis** module producing RDM matrices with **JSON and CSV exports**, validated against reference calculations
- Designed an asynchronous **data and inference pipeline** (Celery, AWS SQS, Redis-backed SSE, S3, GPU workers) streaming live job progress and persisting results and provenance to **PostgreSQL**
- Provisioned AWS with **Terraform** (ECS, RDS, SQS/DLQ, S3, IAM, CloudWatch) and built **GitHub Actions CI/CD** covering **245 passing tests**, migration validation, and container scanning

Sprintern

Python, SQL, PostgreSQL, FastAPI, Next.js, Supabase

Production internship data platform with real active users



- Built an **ETL pipeline** ingesting **9 external data sources**, then normalizing, validating, and **deduplicating** records via canonical fingerprints, cutting redundant egress with **conditional HTTP requests** (ETag / 304)
- Built an **admin data-quality console** surfacing rejected rows, parser failures, and source freshness, letting operators diagnose a broken upstream schema without code changes
- Implemented a durable **PostgreSQL job queue** (idempotency keys, SKIP LOCKED, leases, retry backoff) and enforced **row-level security** across separate database roles