

Brian Maina

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EDUCATION

Boston University

Boston, MA

B.A. in Computer Science and Economics

Expected May 2028

- **Coursework:** Data Structures & Algorithms, Computer Systems, Software Engineering, Databases, Linear Algebra, Theory of Computing Languages, Empirical Economics, Economics in Legal Issues & Discrete Math

TECHNICAL SKILLS

Languages: Python, C++, JavaScript, TypeScript, SQL, Java

Frameworks & Libraries: FastAPI, SQLAlchemy, React, React Native, Node.js, Express, XGBoost

Databases & Infrastructure: PostgreSQL, Redis, Docker, AWS (ECS Fargate, S3, RDS, EC2), Supabase, Firebase

Tools & Platforms: Git, GitHub Actions, Jest, Supertest, pytest, Vercel, Railway

EXPERIENCE

Software Engineer Intern

May 2026 – Aug 2026

AdaptX (Nonprofit – Fitness Accessibility Platform)

Boston, MA

- Built React Native app and FastAPI backend for amputee rehab, virtual 5K participation, and race registration
- Consolidated 1,000+ profiles and 72 fundraising campaigns from RunSignUp, Zeffy, JotForm into Bloomerang CRM
- Automated ingestion of 13K race photos; built admin dashboard to moderate community posts and training guides
- Containerized services and delivered deployment-ready AWS Fargate configuration for handoff to incoming team

Undergraduate Research Assistant

Mar 2026 – Present

Marintchev Lab, BU Dept. of Pharmacology, Physiology & Biophysics

Boston, MA

- Performing NMR backbone assignment verification for protein 5MP1 in CARA toward planned lab publication
- Improved carbon peak matching accuracy 53% by cross-referencing backbone ($C\alpha/C\beta$) and side-chain shift lists
- Extending pipeline to proton peak matching to recover sequence information from lower-quality spectral datasets

Software Engineer Intern

Sep 2025 – Dec 2025

Portal (EdTech Startup)

Remote

- Shipped ATS resume-scoring with PDF/JSON ingestion across 3 formats; +25% accuracy vs recruiter benchmark
- Reduced ATS response time via Redis caching with 24-hour expiration on hot resume data and parsed outputs
- Wrote 360+ Jest tests across authentication, account recovery, and payments flows, cutting QA cycle by 60%

PROJECTS & OPEN-SOURCE CONTRIBUTIONS

Open Source Contributor | *Apache Superset, Hermes-WebUI*

Jun 2026 – Present

- Fixed dictation cutoffs in Apache Superset (73k+ stars) via continuous speech recognition with auto-restart
- Added Screen Wake Lock to Hermes-WebUI (15k+ stars) to sustain dictation through screen-sleep

Order Matching Engine | *C++17, LOBSTER NASDAQ Dataset* | [Link](#)

Feb 2026 – Apr 2026

- Replayed 269K LOBSTER NASDAQ messages at 0.5M+ events/sec; 70% snapshot agreement vs ground truth
- Implemented price-time priority matching across limit, market, cancel, and modify orders; $O(\log n)$ book updates
- Engineered lock-free single-producer single-consumer queue with cache-line padding; 16 GoogleTest cases passing

Project Winston | *Python, FastAPI, PostgreSQL, Redis, Docker, XGBoost* | [Link](#)

Apr 2026 – Present

- Built quant research platform covering 17 commodity futures and 503 S&P 500 names with end-to-end pipeline
- Stacked XGBoost/LightGBM with walk-forward OOS validation; HMM regime detection gates signal execution
- Designed 11-agent reasoning layer via async Anthropic API; FastAPI backend with async SQLAlchemy and Redis

TriLive | *FastAPI, PostgreSQL, Redis, APScheduler, Docker, React Native* | [App Store](#)

May 2025 – Jan 2026

- Built FastAPI backend and TriMet ingestion for real-time iOS transit tracker; shipped to App Store with 70+ users
- Reduced stop lookup latency 32x (16ms $\rightarrow$ 0.5ms) via Redis caching; Dockerized services with auto-deploy on push

LEADERSHIP & ON-CAMPUS INVOLVEMENT

Vice President of Administrative Affairs

May 2026 – Present

Alpha Kappa Psi (Nu Chapter), Boston University

Boston, MA

- Built and maintain the chapter member portal (React, Node/Express, PostgreSQL) serving 70+ active members
- Shipped a family-tree visualizer, alumni directory search, and a life-points engine to streamline chapter operations

Junior Development Team

May 2026 – Present

Hack4Impact, Boston University

Boston, MA

- Building front-end features for the Boston Municipal Research Bureau site redesign, serving city policymakers
- Modernizing a legacy WordPress platform into an accessible, searchable research hub spanning decades of research