Ammaar Alam Hameed

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Education

Princeton University — Princeton, NJ

Bachelor of Science in Engineering, Computer Science | GPA: 3.89/4.0 — *Jul 2023 – May 2027*

Minors: Statistics and Machine Learning; Optimization and Quantitative Decision Science

Honors: Shapiro Prize for Academic Excellence

Coursework: Data Structures and Algorithms | Programming Systems | Machine Learning | Computer Architecture | Theoretical CS | Discrete Math | Optimal Learning | Convex Optimization | Regression and Time Series Analysis | Stochastic Calculus

Technical Skills

Languages: Python, TypeScript, Java, C/C++, JavaScript, Rust, SQL, Bash, R
ML/AI: PyTorch, TensorFlow, scikit-learn, Hugging Face Transformers, pandas, NumPy, OpenCV
Infrastructure: AWS (Lambda, DynamoDB, S3, KMS, CloudWatch, CDK), Google Cloud Platform (GCP), Docker, Kubernetes, Terraform, GitHub Actions, Ansible, Linux, Apache Flink
Web: React, Next.js, Node.js, Express, Flask, PostgreSQL, MongoDB, Redis, WebSockets, REST APIs

Professional Experience

Amazon Leo (Project Kuiper) — May 2026 – Aug 2026

Incoming Software Engineer Intern — *Redmond, WA*

TigerApps [Student Organization] — Sep 2024 – Present

Lead Software Engineer — *Princeton, NJ*

- Orchestrated infrastructure for **10+ applications** serving **94% of campus (5,000+ DAUs)**; led team of **15+ developers** defining CI/CD standards and incident response protocols.
- Drove **850+ daily users** and **112K+ conversations** by building production RAG AI campus assistant using MongoDB vector search, custom retrieval architecture, and Google Places API Model Context Protocol (MCP) servers.
- Reduced memory usage **65%** via heap profiling and object pooling; engineered high-availability architecture handling **100x traffic spikes** (**3,000+ req/s**, **sub-200 ms p99**) with Redis caching.

Ultimate Kronos Group (UKG) — May 2025 – Aug 2025

Software Engineer Intern — *Weston, FL*

- Slashed median CI wall time **34%** and GCP storage costs by **$9.3k/mo** via shard-aware artifact caching, concurrent dependency resolution, and dedup policies; kept **95%+** pipeline success and **99.95% release SLO**.
- Cut MSI upgrade validation **93%** (48h to 3h) and enforced org-wide PR gate by engineering a headless end-to-end upgrade pipeline that processes 32 integration pods in parallel via GitHub Actions and GCP buckets.
- Accelerated development by engineering AI-integrated workflows (Claude Code/Codex CLI) with Slack/Jira MCP servers; created prompt-engineering documentation used for engineer onboarding.

Projects

MineBench.ai | *TypeScript, React, Next.js, Three.js, Prisma/PostgreSQL* — Jan 2026 – Present

- Built and maintained an open source **LLM spatial reasoning benchmark** where models generate structured voxel JSON via a custom tool-calling interface; scaled to **157K blind human votes**, **120+ GitHub stars**.
- Engineered the full-stack web platform for blind comparison of model-generated 3D builds, implementing deterministic validation, custom voxel rendering engines, conservative Glicko-2 ranking, and efficient browser-side handling of large JSON payloads.

TigerType | *React, Node/Express, WebSockets, PostgreSQL, GitHub Actions* — Jan 2025 – Present

- Scaled to **1,800+ daily users (20% of campus)** handling **1.2M+ races** and **119M+ words typed** by developing real-time multiplayer typing game with SSO authentication, matchmaking, and leaderboards.
- Maintained state consistency across **880 concurrent lobbies** with **sub-40 ms p99 latency** via WebSocket synchronization engine and optimized database queries.

Atlas (Quant Trading Platform) | *Python, Pandas, NumPy, Polars, Alpaca/Coinbase APIs* — Dec 2025 – Feb 2026

- Engineered backtesting framework with realistic friction modeling (slippage, funding rates, maker/taker fees) across equities and crypto derivatives; achieved **1.63 daily Sharpe** and **111% annual return** on 365-day backtest.
- Built walk-forward optimization pipeline with rolling train/validate/test windows, preventing curve-fitting via median parameter extraction across 12+ temporal segments.

WordHunt Solver | *PyTorch, OpenCV, Quartz CGEvent API, Trie* — Nov 2024 – Dec 2025

- Achieved a **362,000-point Word Hunt world record** and helped improve **GamePigeon's anti-cheat system** by building and shipping a GitHub-released macOS solver application with custom convolutional neural network board recognition (**99%+ accuracy** on **2,400+** images), Trie-optimized DFS search, and Quartz cursor automation at **60+ swipes/sec**.