

Ramy Mekhzer

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Summary

MEng Computer Science and Software Engineering student at the University of Birmingham, currently on a 12-month industrial placement at Amazon. I have built across a fair range rather than settling into one area: a Spring Boot API with its own estimation engine, a particle-filter SLAM system, a multi-agent assistant, and a set of tools I run every day. At Amazon I took over an internal platform used by more than a hundred people and brought it up to a standard people can rely on. I am looking for a software engineering internship where I can go deeper.

Education

University of Birmingham, MEng Computer Science and Software Engineering – Sept 2023 - June 2028
Birmingham, UK

Four-year MEng including a 12-month industrial placement (2026-27).

- Year 3 average: 75.2 percent (First). Machine Learning 84, NLP 79, Evolutionary Computation 77.
- Relevant modules: Machine Learning, Intelligent Robotics, Neural Computation, Systems Programming

Experience

Financial Analyst (Industrial Placement), Amazon – London, UK June 2026 - June 2027

- Amazon Leo (formerly Project Kuiper), Amazon's low earth orbit satellite broadband business.
- Took ownership of an AWS-hosted internal deal-approval platform used by 100+ employees across four functions; introduced source control and a documented production baseline
- Rebuilt its deal intake and approval flow to production standard, cutting average approval cycle time by roughly 40 percent in the weeks after rollout
- Built a narrative and scorecard generator for deal approvals; surveyed users reported it halved drafting time
- Write SQL and Python to pull and transform data for stakeholders, and produce P&Ls and forecasts for deals
- Ran two internal enablement sessions on AI tooling, averaging 14 attendees

Treasurer, University of Birmingham Chess Society – Birmingham, UK June 2024 - present

- Manage a university-held account of around GBP 1,000, with budgeting, reimbursements and financial reporting for roughly 80 members

Projects

Trip Cost and Time Decomposer – github.com/Ramy3077/TravelProject 2026

Cost and time breakdown for a trip, with a confidence level on every estimate. Solo, 50 commits.

- Built a Spring Boot 3 / Java 21 API exposing 6 REST endpoints with 16 unit tests, running alongside a Next.js client, Python worker and PostgreSQL from a clean clone under Docker Compose
- Designed the estimation engine as the load-bearing path: geodesic distance and regional multipliers across three cost components, with no upstream provider required
- Wrote a Python ETL worker loading a 48,000-city reference dataset, enriched with IATA codes from 9,800 airports and joined to a 4,956-city cost-of-living index in PostgreSQL

Probabilistic SLAM with Autonomous Exploration – github.com/Ramy3077 Sept - Dec 2025

Team of three. My contribution: the SLAM core, motion and measurement models, and the inverse sensor model.

- Implemented a 100-particle FastSLAM filter from scratch in Python with no SLAM libraries, over a 400x400-cell occupancy grid at 0.05 m resolution
- Benchmarked frontier-based exploration against a random-walk baseline over 10 trials per environment: frontier reached 60.8 percent coverage against 34.0 percent, at lower map entropy
- Diagnosed a reversal in a larger layout where random walk won, tracing it to sensor noise creating spurious occupied cells that made the A* planner treat corridors as impassable

Banking Multi-Agent System – github.com/Ramy3077/banking-multi-agent-adk 2026

- Built on Google's ADK: a root agent exposing 6 tools across 2 sub-agents, grounded in BigQuery

Skills

Languages: Python · Java · TypeScript · JavaScript · C · SQL

Backend and data: Spring Boot · REST APIs · PostgreSQL · MongoDB · BigQuery · pandas

Frontend and infra: React · Next.js · Angular · Docker · CI/CD · AWS · Azure · Linux · Git