Omar Tawfik

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Education

Boston University, Questrom School of Business — Boston, MA
MS, Business Analytics — *Expected Aug 2027*
- Dean's Scholarship recipient
- Relevant Coursework: Neural Networks, Data Mining & Machine Learning, Data Management, Statistical Analysis, Optimization

Boston University — Boston, MA
BA, Economics & Computer Science, Business Administration & Management Minor — *May 2026*
- Dean's List: Fall 2025, Spring 2026 | United Economics Association | Sports Business Club
- Relevant Coursework: Machine Learning, Artificial Intelligence, Data Structures & Algorithms, Databases & SQL, Econometrics, Software Engineering

Experience

Founder & Full-Stack Engineer — Boston, MA
PODS, Early-Stage Startup | Python, Flask, React, SQL, AWS — *Jan 2026 – Present*
- Founded and led a student team building a campus platform for short-term, activity-based groups; grew to 50+ active users and reached the semifinals of an $80K venture competition
- Architected the full stack: REST APIs with token auth, a normalized SQL schema, and real-time notifications on AWS
- Built an agentic group-matching system with context and state management, replacing manual coordination

Software Engineer Intern — New York, NY
YW Apparel New York | Mome Choix (Shopify E-Commerce) — *Jun 2025 – Nov 2025*
- Designed and launched a custom Shopify storefront in HTML, CSS, and Liquid, improving SEO and mobile responsiveness for a 25% increase in conversion rate
- Instrumented the purchase funnel and rebuilt the highest-friction steps, lifting average order value and mobile engagement
- Collaborated in agile sprints to translate performance data into prioritized product decisions

AI Engineer Intern — London, UK
PortF — *Feb 2025 – Apr 2025*
- Designed and shipped a production agentic system that selected and sequenced its own tool calls across lead sourcing, enrichment, and CRM writes, re-planning on failure rather than halting the pipeline
- Built a self-evaluation pass scoring LLM-generated copy against approved messaging rules before send, with rate-limit and bounce-feedback handling that held deliverability at 100K+ emails per month
- Drove 10+ qualified B2B meetings that converted into new client acquisition
- Built portfolio optimization models in Python, scikit-learn, and TensorFlow for risk-adjusted allocation insights

Data Analyst Intern — New York, NY
United Nations — *May 2024 – Aug 2024*
- Built Power BI and Tableau dashboards adopted by 6+ departments for executive-level reporting
- Engineered SharePoint data pipelines consolidating siloed department datasets into a shared reporting layer for 50+ staff
- Defined reporting requirements through stakeholder interviews, translating complex datasets into decisions

Projects

Deep Q-Learning Agent for Multi-Agent Risk — Spring 2026
Java, Deep Reinforcement Learning | github.com/otawfik/Risk-Deep-Q-Learning
- Built a dual-decoder deep Q-network from scratch in Java with no PyTorch/TensorFlow and no autograd, engineering 41 normalized features and scoring candidate moves individually to handle a variable-size action space without a fixed-width output layer
- Won every head-to-head game against the aggressive heuristic agent and matched a 30-rollout MCTS search agent using a single forward pass in place of simulated lookahead
- Diagnosed and corrected a degenerate turtling policy, then traced multiplayer degradation to the encoder compressing the opponent field into two scalars and proposed a permutation-invariant opponent encoder

Technical Skills

Languages: Python, R, SQL, Java, JavaScript, TypeScript, HTML/CSS, STATA
Machine Learning: Supervised & Unsupervised Learning, Neural Networks, Deep Learning, Reinforcement Learning
Frameworks & Libraries: Pandas, NumPy, scikit-learn, TensorFlow, Matplotlib, React, React Native, Flask, Node
Developer Tools: AWS, Git/GitHub, Docker, Jupyter Notebooks, Figma, JIRA, Notion
Analytics & Visualization: Power BI, Tableau, Excel (Advanced), Google Analytics, Time-Series Analysis
Languages Spoken: English (Native), French (Fluent), Arabic (Fluent), Spanish (Conversational)