

# HASHEM ALOMAR

Ellicott City, MD

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## Education

### University of Maryland

*Bachelor of Science in Computer Science and Mathematics*

Graduating May 2027

GPA: 3.8

## Experience

### Software Engineering Intern

May 2025 – Present

*4A Consulting*

*Ellicott City, MD*

- Developing a recruiter dashboard using **React**, **Next.js**, & **AWS RDS**, streamlining applicant data management.
- Implementing an interview platform with an admin dashboard powered by **SQLite** to manage questions in real time.
- Creating a company-wide chatbot using **Cloudflare** & **Pinecone** to automate employee & customer support.

### Undergraduate Research Assistant - Quantum Machine Learning

January 2025 – Present

*University of Maryland*

*College Park, MD*

- **Increased daily back-test throughput by 40%** by engineering a multi-asset QLSTM pipeline in **PyTorch** + **PennyLane**, scaling a 2024 single-stock model to predict 10+ equities concurrently, **saving \$100 per iteration**.
- Achieved **7% higher model accuracy** by testing QLSTM models on **IonQ** hardware across 3–8 qubits, benchmarking real-hardware performance vs. noisy simulators to validate quantum advantage under practical constraints.
- **Reduced normalized RMSE by up to 12%** on 4-qubit configurations by optimizing QLSTM circuit depth and topology, demonstrating superior performance to classical LSTM across 4–12 qubits.

### Software Engineering Intern

May 2024 – August 2024

*Mildenberg Boender & Assoc.*

*Ellicott City, MD*

- Designed an intranet platform with **React/Node.js & Firebase** to handle payroll and project management.
- **Reduced document retrieval time by 25%** by integrating a search engine into intranet platform that enables **50+ employees** to quickly access crucial civil engineering documents.
- **Improved average session duration by 10%** by redesigning the company site with **Next.js (SSR)**, **TypeScript**, and **Tailwind**, boosting interactivity with modern UI components and responsive media handling.

## Projects

### Dr. Terp — React, Git, Typescript, Tailwind, Vercel — [terpcord.vercel.app](https://terpcord.vercel.app)

- Built a **full-stack web app** to help **200+ UMD Students** make data-driven professor selection for courses.
- Developed a **Python web scraper** using **BeautifulSoup** to parse **24,000+ UMD course records**.

### Stock LSTM Prediction Model — Node/Express, Python, TensorFlow — [Repository](#)

- Engineered a Stock LSTM Prediction model with up to **90% accuracy** using **TensorFlow & Skit Learn**.
- Built an interactive **Node.js/React app** with real-time stock data to test and visualise performance of Model.

### Craving Hour Halal Foodtruck Website — React(Native), Typescript, AWS(CF, RDS, Lambda) — [Website](#)

- Developed a scalable full-stack website using React, Typescript and Tailwind, deployed via Docker on **AWS Cloudfront**, serving **200+ customers** daily.
- Architected admin portal for employees using **React Native, AWS Lambda + S3, PostgreSQL**, enabling employees to make live changes to client-facing website, **reducing administrative overhead by 10+ hours** monthly

## Involvements

### Club Rock Climbing — *Vice President*

- Organized competitions and outdoor trips for 50+ students. Coached members 2x a week at practice.

### B!g Think AI — *Officer*

- Teaching 30+ students AI/Machine Learning concepts such as Linear Optimization, Gradient Descent, Random Forest.

### Movement Climbing Gym — *Volunteer Coach*

- Coached 50+ 5-10 year olds rock climbing at a competitive level. 10+ students ranked nationally under USA Climbing.

## Technical Skills

**Languages:** Python, Java, C/C++, Assembly HTML/CSS, JavaScript/TypeScript, SQL(Postgres), Swift

**Frameworks & Dev Tools:** Next, Git, Express/Node.js, Angular.js, React/React-Native, Firebase, AWS(Cloudfront, RDS, Lambda), Vercel, Tailwind, SQLite, Unix

**Libraries:** PyTorch, NumPy, Pandas, TensorFlow, Redux, Skit Learn, PennyLane, PyTorch, jQuery