AHMAD BASYOUNI

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Education

City University of New York CSI | GPA: 4.0/4.0   **Expected Graduation: May 2026**
Bachelor of Science in Computer Engineering, Minor in Computer Science, Verrazzano Honors
   Relevant Coursework: Object Oriented Programming, Operating Systems, Discrete Structures, Calculus, Linear Algebra, Statistics, Data Structures and Algorithms
   Affiliations: SEO Tech Developer, CodePath Tech Fellow, Computer Science TA, Computer Science Club, Headstarter Fellow

Relevant Experience

Software Engineering Intern   **May 2024 − Present**
New England Investment Consulting Group LLC
- Spearheaded development of a school system web application, integrating data-based charts, analytics, and AI features using **React**, **Typescript**, **Node.js**, **OpenAI**, and **MongoDB**, resulting in a platform now utilized by over 1000 students in China.
- Launched 50+ **Express RESTful API's** and optimized backend functionality, implementing lazy loading to improve scalability.
- Implemented **CI/CD** pipelines, cutting deployment time by 30%, and initiated **iOS** app development using **SwiftUI** and **Xcode**.
- Collaborated with a team of 15 engineers to produce detailed technical and product **documentation**, reducing inquiries by 35%.

Machine Learning/AI Researcher   **May 2024 − Present**
NYU (New York University)
- Researched and benchmarked GPT's sentiment analysis against advanced **PyTorch** models, including **Hugging Face's** sentiment models, enhancing DeepMoji accuracy by 30%.
- Optimized Reinforcement Learning models for stress and anxiety detection, boosting performance by 70% through advanced **LSTM** networks and **vectorization** methods.
- Engineered 10 new mapping emojis into a **Federated Learning** model, increasing accuracy by 40% on a dataset of 300 sentences.
- Applied deep learning techniques across various tasks: implemented **CNNs** for image classification, used transfer learning with pretrained models, and trained sentiment classifiers using **BERT**.

Software Engineering Intern   **April 2024 − Present**
SEO (Sponsors for Educational Opportunity) Tech Developer
- Completed 300+ hours of software engineering training, focusing on full stack development/data structures and algorithms.
- Performed **unit/systems testing** and gained familiarity with **DevOps** tools such as **Ansible** and **Terraform**.
- Engaged in data engineering tasks with a focus on data integrity and security, utilizing **version control (Git lifecycle)**, **Agile methodologies**, and application resiliency within a **Linux** environment.
- Led a team of 4 through the software development cycle, implementing a **React** frontend and **Flask** backend, and integrating a **PyTorch** model to generate customized study plans based on user data and performance metrics.
- Optimized application response time by 60% through efficient **SQLite3** database queries and streamlined **CI/CD** pipelines, resulting in improved user experience and faster deployment cycles.

Projects

ProxiLink (Startup) | *React Native, Expo, FastAPI, Python, PyTorch, WebSockets, Google+Apple Maps API*   Website
- Led a team of 3 in the development of ProxiLink, an AI-powered iOS app designed to offer personalized recommendations, smart itineraries, and group planning features, resulting in **200** downloads on the app store/500 users on the landing page's beta waitlist.
- Engineered a backend with **FastAPI** to handle preferences quizzes, authentication, and data storage, utilizing **WebSockets** for real-time notifications and Apple Maps and Google Maps APIs for location services and recommendations.
- Developed a **PyTorch** model to generate optimized recommendations based on user preferences, locations, and previous hangouts, integrating it with a **React Native**/**Expo** frontend to deliver a seamless user experience.

Financial Complaint System - Ruby | *Ruby on Rails, Langchain, PostgreSQL, pgvector, OpenAI*   GitHub
- Developed a **RAG**-based complaint system during Headstarter hackathon, selected by Ruby for company implementation.
- Engineered **ETL** pipeline using **Langchain** and OpenAI, projecting 30% improvement in complaint categorization accuracy.
- Designed system to handle 1000+ complaints per batch, potentially saving 20+ man-hours weekly in analysis.

Game Chill | *Typescript, Next.js, Express, Docker, FFmpeg, Firebase, Google Cloud*   GitHub
- Developed a video processing system using **Google Cloud** Pub/Sub and Cloud Run, optimizing asynchronous video transcoding for enhanced efficiency and scalability, while building a **Next.js** frontend to facilitate community interaction and clip sharing.
- Built a secure authentication system with **Firebase** Authentication and crafted the backend using Firebase Realtime Database and Cloud **Firestore**, ensuring seamless data synchronization and user experience.
- Designed a Node.js Twitch bot, providing real-time chat moderation and a 35% increase in revenue with the average of 50 viewers.

Technical Skills

   Languages/Databases: Python, C/C++, C#, JavaScript, TypeScript, Swift, Java, PHP, Go, R, SQL, PostgreSQL, MongoDB
   Frameworks/Libraries: React, Next.js, Angular, Flask, Django, Express.js, Node.js, Spring Boot, Tailwind
   Machine Learning: PyTorch, RAG, LangChain, Agents, Embeddings, TensorFlow, Scikit-learn, Pandas, Matplotlib, Forecasting
   Developer Tools: AWS, Google Cloud, Azure, Docker, Linux, Git, Jira, Trello, Jenkins, Figma
   Certifications: AWS Certified Cloud Practitioner (In Progress), JP Morgan Software Engineering Job Sim - Open Source