Maheen Masoud

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Education

- **Hamilton College - GPA: 3.8/4.0**   *BA (Computer Science, Mathematics - Dec 2024)*
- **University of Manchester, Study Abroad Program**   **(***Computer Science, Mathematics, 2023)*
- **Relevant Coursework:** Advanced Algorithms, Artificial Intelligence, Deep Learning, Statistics 1, Statistics 2, Operating Systems, Databases, Linear Algebra, Mathematical Modelling

Honors and Awards

- Dean's list (all semesters)
- Sam Welsch Memorial Prize Scholarship in Computer Science at Hamilton College
- Outstanding Cambridge Learner Awards - Mathematics (Top in the world), Physics (Top in the region)

Experience

Machine Learning Software Engineer Intern - Asurion | Nashville, TN   **May 2024 - Aug 2024**
Expert Assist Autocomplete Feature
- Created the backend server of an autocomplete feature for Asurion's global call centers, leveraging AWS, Python Async IO, AIOHTTP, and LLMs to generate real-time low-latency recommendations, expecting to decrease call resolution time by ~12 seconds and save ~$600k
- Implemented Kafka logging to track recommendations and errors, and managed exception handling to ensure the server remained operational 24/7 for a pilot of 20+ experts
- Took ownership of the product and collaborated closely with 6 teams on the feature's design, implementation, and integration with the company's Expert-Assist platform

Multi-class Call Classification
- Developed a classification model using LLMs to categorize and sub-categorize 200+ daily calls, enhancing customer service analytics for a potential client partnership of ~$10 million
- Deployed the classification model using Amazon SageMaker, automating daily querying and batch processing

Software Engineering Intern - FairMarkit | Boston, MA   **June 2023 - Aug 2023**
- Developed a Python tool to assist ~40% of internal queries, enhancing their ML-based recommendation system
- Implemented 10 PyTest unit tests, expanding code test coverage by ~10%
- Created 4 API endpoints within the recommendation system, incorporating SQL queries and AWS S3
- Optimized Elasticsearch history storage, decreasing storage memory requirements by ~30%
- Designed and implemented a user-friendly app using Streamlit for tool utilization

AI Research Assistant - **Hamilton College |** Clinton, NY   **Jan 2022 - June 2022**
- Fine-tuned 2 GPT AI models on 8 datasets containing 8000+ natural language tokens to generate a 5000+ word script for an AI opera for 50+ audience members
- Designed 5 background themes through image manipulation using Python (Pillow, Numpy) and DeepDream AI

Computer Science Teaching Assistant - **Hamilton College |** Clinton, NY   **Aug 2021 - Present**
- Tutored 50+ students in labs for courses in C++ Design Principles and CS101
- Assessed projects, provided feedback, and graded exams for 100+ students for Data Structures & Algorithms

Technical Skills

- **Languages**: Python, C++, Go, SQL, Ruby, R, Prolog, Bash, Assembly, TypeScript
- **Tools & Frameworks**: Git, Django, FastAPI, GraphQL, AWS, React, Pandas, PyTorch, Docker, MongoDB, Kafka

Projects

- **Nutrition Assistant:**
  A personal nutrition assistant leveraging GPT, OpenFoodFacts, OpenCV, GTTS, and Pygame to provide personalized dietary recommendations through visual recognition and natural language processing
- **Graph Pruning Betweenness Centrality Estimator:**
  Python-based algorithm for efficient graph pruning and optimized betweenness centrality estimation, designed for large networks
- **Music Classification Web App**:
  Collaborated with a team to build a Django web app for composer prediction from music notation, using Music21 for feature extraction and scikit-learn for classification, with a frontend in TypeScript, HTML, and Tailwind CSS