Ed Almusalamy

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Education

GPA: 3.88

Computer Science (MS) - *University of Massachusetts Amherst*

Computer Science (BS) & Applied Math (BS) - *University of Massachusetts Amherst*

Relevant coursework: NLP, Numerical Analysis, Discrete Math, Computer Systems, Statistics, Algorithms, Computer Networking, AI, Abstract Algebra, Randomized Algorithms, Machine Learning, System Defense & Test, Software Engineering

Professional Experience

Teaching Assistant: *UMass Amherst CICS, Amherst, MA, February 2023 - present*

- Developed a comprehensive understanding of the course material, enabling effective communication and explanation of complex concepts to students.
- Effectively communicated with students, faculty, and staff to address concerns, answer inquiries, and provide timely feedback.
- Provided individualized support to students by offering office hours, clarifying doubts, holding exam review sessions, and guiding them through assignments and projects.

Research Assistant: *UMass Amherst CICS, Amherst, MA, May 2022 - present*

- Implemented a line-by-line data reading approach in the parser, resulting in a 20% reduction in runtime and a 50% decrease in memory usage.
- Conducted rigorous analysis on the limits of a probabilistic data structure to ensure result validity, successfully identifying and rectifying multiple processing errors.
- Translated and optimized code from C to Python, leading to a remarkable 75% reduction in memory usage and a 50% decrease in runtime.

Skills

Progamming Skills: Python, C, Java, Javascript, SQL, Bash, & Matlab

Tools & Systems: Latex, Photoshop, Unix, Nessus, NMap, Pytorch, Tensorflow, Numpy, Pandas

Projects

TrashGPT: *Python, NLP, Data Mining, Fine Tuning*

- Developed the foundational structure for an innovative ML framework capable of automating the learning and generation of podcasts using existing episodes and subtitles
- Expertly fine-tuned diverse language models within the framework, successfully producing distinct outputs. Some models excelled in grammatical accuracy and coherence, while others effectively captured the unique personality traits of the podcast hosts

Worth it or Not: *Python, Software Engineering, Machine Learning, Web Parsing*

- Developed and deployed an innovative application that accurately predicts user satisfaction with video games based on average playing time data sets
- Implemented an automated machine learning ensemble model in Python, integrating web parsing capabilities to gather relevant data and provide personalized game recommendations

Viginere Cipher: *Python, Cryptography, Encryption, Decryption*

- Developed a command line application for encrypting and decrypting user-selected letter values, enabling seamless message decryption for other users
- Implemented a streamlined encryption and decryption algorithm by leveraging modular arithmetic, ensuring standardized computations and enhancing the efficiency of the algorithm