

Anthony Elkommos Youssef

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Dynamic and results-driven engineer with a passion for shaping the future of Artificial Intelligence. Strong foundation in software design patterns, with expertise in data-focused development, statistical modeling, web crawling, and data mining. Proven success integrating AWS S3 with AI/ML models, building predictive and regression models, and implementing web scraping.

Skills

• Programming languages:

- **Expert:** Python, R, Java, Typescript / JavaScript, C#, SQL, BigQuery
- **Familiar:** C, C++, MATLAB, Assembly (x86 & MIPS), Verilog, PHP, Scala

Experience

Qamous.org

Software Engineer and Architect

New York, NY
September 2023 – September 2024

- Engineered using ReactJS, TypeScript, NestJS, Sass, MySQL, TypeORM, Docker, Jest; delivering a 91% performance score
- Planned and executed the deployment strategy using AWS: Leveraged ECR and ECS for backend and database deployment, ensured secure API access via ALB with HTTPS, and integrated Amazon EFS and S3 for scalable logging and data backup
- Designed and incorporated a secure authentication strategy with bcrypt, Express, and Passport.js to safeguard user credentials
- Scraped language data, implemented RESTful APIs and integrated React Query for seamless front-to-back data communication

eClinical Solutions

Full Stack Software Engineer - AI/ML Team

New York, NY
December 2022 - September 2023

- Integrated and deployed AWS S3 AI/ML models, performed SQL migrations, and optimized query performance by 10%
- Applied OOP principles and .NET front-end development expertise to resolve over 15 complex bugs within tight deadlines using Angular and TypeScript, reducing overall system downtime and enhancing user experience
- Designed and implemented over 20 new features based on market research and collaborated in an Agile Scrum framework
- Developed and maintained backend APIs, executed software restructuring, and drove implementation of key features using C#

Columbia University

Application Systems Developer (Part Time)

New York, NY
June 2022 - December 2022

- Performance-tuned the Directory of Classes system and developed a new system, decreasing update runtime by 83% using C
- Tested the performance and reliability of the new system using python and bash, contributing to the system's data accuracy
- Prepared UNIX shell scripts for end-to-end testing of applications, ensuring system stability for over 4,000 students and staff

Wayfair

People Analytics Co-op (Intern)

Boston, MA
December 2021 - June 2022

- Selected as Co-op Captain: created and facilitated events for hundreds of co-ops fostering engagement and community-building
- Generated complex SQL queries for Google BigQuery and DataStudio, improving employees' time efficiency by over 25%
- Automated processes in Python, reducing time by 68%, saving 16 hr/month in data extraction and 6.25 hr/month in data cleanup
- Presented data analyses and insights to leadership and identified enhancements for recruitment and candidate experience
- Programmed a Slack chatbot saving employees valuable hours finding time-sensitive resources

IBM

Client Services & Consulting: Talent Identification Program (Intern)

New York, NY
May 2021 – August 2021

- Presented a consulting solution that was reviewed and implemented for a high-priority case study (<https://shorturl.at/VyuVA>)

Education

The University of Texas at Austin

M.S. in Artificial Intelligence | Cumulative GPA: 4.0

Austin, TX
September 2024 – Present

- **Relevant Coursework:** AI391L – Machine Learning: Classification, Regression, Naïve Bayes, SVMs, HMMs, Statistical Learning Theory, SVD / PCA, MVN, Kernel Methods; AI394R – Reinforcement Learning: TD Learning, Monte Carlo, SARSA, Q-Learning, Dynamic Programming, Dyna-Q, Policy Gradients, REINFORCE, MCTS; AI395T – Deep Learning: SGD, Convolutional Neural Networks (CNN), Recurrent Neural Networks (RNN), Transformers and Attention Mechanisms using PyTorch and Scikit-Learn

Northeastern University

B.S. Computer Science with a concentration in Artificial Intelligence | Dean's List

Boston, MA
September 2019 – August 2022

- **Resident Assistant:** fostered relationship development among over 100 students and planned staff meetings
- **Relevant Coursework:** IS4200 – indexing, crawling, search engine architecture, ElasticSearch, feature engineering; CS4100 – MDPs, Hidden Markov Models; DS4400 – regression, classification, decision trees, hypothesis testing, k-NN, k-means clustering
- **Research Assistant, Outreach Coordinator:** analyzed and applied Computer Vision on mice dMRI images, updated websites

Projects

- **Loan Default Risk Analysis:** ML loan default prediction using CV AdaBoost Classifier, Support Vector Classifier (SVC), and Logistic Regression with cross-validated hyper-parameter values
- **Basketball Point Prediction:** parsed and cleaned data from sportsdata.io to be used for linear regression, ridge regression, and neural nets and compared the prediction accuracies
- **Stonkorithm:** implemented a 3-layer Sequential model with Keras & TensorFlow to predict stock prices using market data and sentiment analysis on Reddit & Twitter
- **NLP Sarcasm Detection:** semantic modeling of sentences using neural networks using nltk, Keras, and Tensorflow
- **Real-time Transaction System:** Java & Spring ledger system, utilizing Event Sourcing Pattern to maintain a transaction history
- **Ray Tracing:** Followed Peter Shirley's Ray Tracing book and added multi-threading support in C++

Volunteering, Leadership & Mentoring

- **TKOL Scouting Group President & Founder, COSF President, Peer2Peer Ambassador:** mentored and trained 100+ youths
- **Awarded Wood Badge:** advanced course in Project & Time Management, Conflict Resolution, Team Building, Leadership
- **Chief Executive Connector at Young Alumni Advisory Board:** serving to create and lead events for alumni and students