Efthimios Vlahos

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EDUCATION

SUNY Stony Brook University — Stony Brook, NY
Master of Science in Applied Mathematics & Statistics, Concentration in Data Science — Aug 2021 – May 2023
GPA: *3.52/4.00*
- Relevant Coursework: Machine Learning, Big Data Analysis, Data Structures and Algorithms, Linear Programming, Probability Theory, Numerical Analysis

CUNY Hunter College — Manhattan, NY
Bachelor of Science in Mathematics & Physics, Minor in Computer Science — Aug 2016 – Jun 2020
GPA: *3.7/4.0*
- Relevant Coursework: Intermediate Mechanics, Quantum Mechanics, Linear Algebra, Abstract Algebra, Vector Calculus, Mathematical Analysis I & II

WORK EXPERIENCE

Microsoft — New York, NY
Data Analyst — Nov 2023 – Present
- Developed and deployed specialized chatbots using **NLP and LLM models**, improving user engagement **accuracy by 40%** and strengthening Microsoft's reputation in AI solutions.
- **Designed NLP-based ETL workflows in Azure ML**, enhancing chatbot training data quality through **Python scripting and SQL**, which facilitated more nuanced customer interactions.
- Incorporated hallucination detection techniques into chatbot models, achieving an impressive **99.5% data accuracy** and contributing to a **25% increase** in the efficiency of AI-driven solutions.

KPMG — New York, NY
Data Analyst Intern — Jun 2023 – Oct 2023
- Engineered predictive models leveraging primarily **Python and SQL** for financial market analysis, resulting in a **35% increase in portfolio performance** for key clients.
- **Employed NLP to distill insights from economic reports** and news, fine-tuning investment strategies that **heightened customer engagement by 20%**.
- **Facilitated model training processes with automated hyperparameter tuning**, resulting in a **50% quicker deployment turnaround**, directly boosting analytics service efficiency for clients.

PROJECTS

2048 Game Deployment on AWS EKS-Fargate | *GitHub* (Kubernetes, Docker, AWS, DevOps)
- Managed a Docker-based CI/CD pipeline for the 2048 game on AWS EKS-Fargate, ensuring **automated scaling, high-availability, and zero-downtime, boosting cloud gaming experience**.

Alzheimer's Generative AI Project | *GitHub* (Python, TensorFlow, GCP, Vertex AI)
- Leveraged transfer learning and NLP methods, incorporating **n-gram feature representation**, to enhance generative AI models for Alzheimer's research, achieving an **accuracy of 88.1%** using LSTM, GRU, and hybrid architectures.

Chest Cancer Detection | *GitHub* (Python, TensorFlow, MLflow, DagsHub, Docker, MLOps, AWS)
- Implemented a CNN-based chest cancer detection platform, achieving **95% accuracy** with **MLflow** and **DagsHub** integration, deployed via **Docker** on **AWS** for scalable, real-time analysis.

LLM-Based Financial ChatBot Tool | *GitHub* (Python, LangChain, OpenAI, FAISS, NLP)
- Built a financial analysis **ChatBot using LangChain, OpenAI GPT, and RAG, optimized with FAISS** for high-accuracy, real-time insights and decision-making support.

SmartLift Analysis | *GitHub* (Python, PCA, Fourier Transformations, Random Forest)
- Applied **ML algorithms** to sensor data, achieving **98.51% accuracy** in exercise classification and reducing miscounts by **5%**, enhancing personalized fitness insights.

NLP Text Summarizer | *GitHub* (Python, NLP, AWS, CI/CD)
- Engineered a machine learning pipeline using the pre-trained **Pegasus-Samsum** model for text summarization, achieving a **45% boost in summarization precision** while automating deployment through a robust **MLOps framework** on AWS.

TECHNICAL SKILLS

Programming Languages: Python, R, MATLAB, C++, SQL, Java, Bash
Frameworks & Tools: TensorFlow, Keras, PyTorch, Scikit-Learn, JAX, Trax, NLTK, SpaCy, Hugging Face, Pandas, NumPy, PySpark, SciPy, Statsmodels, Tableau, Power BI, Looker
Cloud Computing & Big Data: AWS (SageMaker, Lambda, EC2, S3, Redshift), GCP (Vertex AI, Dataproc, Dataflow, BigQuery), Azure, Apache (Spark, Beam), Databricks, Snowflake, PostgreSQL, MySQL
DevOps & MLOps: Docker, Kubernetes, TFX, MLflow, Kubeflow, Airflow, DVC, Prometheus, Grafana, CI/CD, Jenkins, Terraform, Ansible, GitHub Actions, FastAPI, Flask