Vasileios Vittis

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EDUCATION

UNIVERSITY OF MASSACHUSETTS AMHERST *09/22 - Expected 2027*

Doctorate in Computer Science | GPA: 3.3 / 4.0 | UMass CICS Scholarship for Best PhD Applicant 2022

Relevant (600 Level) Courses: Advanced S/W Engineering: Analysis and Evaluation (B+), Advanced Machine Learning (B+)

TECHNICAL UNIVERSITY OF CRETE *09/15 - 11/21*

Bachelor's Degree in Electrical and Computer Engineering | GPA: 3.6 / 4.0 | Class Rank: Top 5%,

Relevant (500 Level) Courses: Advanced Topics in Database Systems (A), Approximation Techniques Massive Databases (A-)

WORK EXPERIENCE

Graduate Research Assistant | *University of Massachusetts Amherst* *09/22 - Present*

– Developed and implemented advanced online processing algorithms for managing complex SQL queries, resulting in a 75% reduction in query time compared to traditional methods. Approximate solutions with approximation mathematical guarantees and orders of magnitude faster query time, enabling integer linear programming.

– Constructed an incremental optimization problem setting that maintained optimal solutions in dynamic environments, resulting in a 40% improvement in overall system performance.

Undergraduate Associate Research Assistant | *Technical University of Crete* *11/22 - 07/22*

– Designed optimizations for real-time supervised binary classification using Random Forest classifier for 25M+ real-time streaming data – Performed statistical analysis to identify data drifts. Developed a distributed ensemble system on top of Apache Flink, using Java and Scala. High-throughput, high-speed and large (big data) data streams.

Blockchain Test Developer | *Startup Ethereum Attestation Service* *09/21 - 01/22*

– Built a prototype testing fullstack app. Developed secure blockchain authentication using Metamask wallet integration, smart contracts development to support Q&A interactions and tipping (upvoting) posts through EAS using custom schema.

– Implemented on Rinkeby (Ethereum TestNet) decentralized internet, developed using Solidity, Truffle Suite, Node.js & React.js

Web Search Evaluator | *Appen CO.* *04/18 - 07/18*

– I analyzed search engine results to ensure they were relevant and useful. I also wrote python code to match search engine results based on predefined rules, supporting the team extracting quality training data.

PROJECTS EXPERIENCE

Online Credit Card Fraud Detection

– Developed distributed semi-supervised binary classification ensemble model. Code for cleaning and preparing data for streaming analysis including imbalance classes, handling missing values, formatting and normalizing. Performed exploratory data analysis on 10M+ streaming data using pandas and numpy. Results: 92% accuracy and 95% F1-score.

– Deployed the ML model on parallel computational nodes using Scala and Java, addressing bottlenecks and synchronization.

Clinical Data and Machine Learning

– Implemented ML pipelines to analyze high-dimensional fMRI data, utilizing numpy for efficient data computation and investigation of feature correlations. – Deployed binary classification models (NB, SVM, Random Forest) and evaluated their performance with cross-validation, ensuring low overfitting and achieving high recall rates.

ToDo OpenAI – Developed a PyCharm extension which offers AI-generated code suggestions & small descriptions for code changes.

DBMS performance monitoring system

– Extract, Transformation and Load (ETL) transformations, data management, data recovery, trigger deployment and implementation of views using MySQL and PostgreSQL environments under JDBC protocol.

– Query optimization (optimize queries plans, joins orders, indexes, pipeline, relational algebra and normalization).

IEEE TUC Student Branch managing system

– Built a full stack website for the local IEEE student branch to support user registration and authentication, team creation for contests, workshop management, posts and news sections. – Developed using DJANGO framework, Python, PostgreSQL, HTML, CSS.

SKILLS

Programming Languages: Python, Java, C++, SQL, Scala, MATLAB, PHP, Javascript, Solidity, R

Technologies: MySQL, PostgreSQL, Apache Flink, Apache Spark, HDFS, Apache Kafka, Databricks, Pandas, scikit-learn, PyTorch,Tensorflow, Agile, numpy, matplotlib, seasborn, plotly, Dash, Gurobi, CPLEX