Vasileios Vittis

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1. EDUCATION

University of Massachusetts Amherst Sept 2022 – Sept 2027
***PhD** - Manning College of Information and Computer Sciences* *Amherst, USA*

Technical University of Crete Sept 2015 - October 2021
***Integrated Master Degree** - School of Electrical and Computer Engineering* *Chania, Greece*

Class Rank : 5.8%
GPA (Computer Science) : 3.6/4

Coursework:
Special Topics in Database Systems* (A+), Approximation Techniques for Massive Databases and Data Streams* (A-), Artificial Intelligence (A), Multi-Agent Systems (A-), Databases (A), Services in Computational Cloud and Fog (A), Digital Signal Processing(A+), Advanced S/W Engineering: Analysis and Evaluation* (B+) *(*graduate courses)*

2. RESEARCH EXPERIENCE

Research Assistant Sept, 2022 – Jan 2024
University of Massachusetts Amherst *Amherst, USA*

– **Research Topic (Ongoing):** "Incremental Maintenance of packages under Data Drifts" Machine Learning techniques over Intensive Query Plans, Orders of magnitude better running time in Gurobi Optimizer with close to optimal objective value.

Keywords: Integer Linear Programming, Mathematical Optimization, Sampling, Machine Learning, Data Drift Adaptation, Data Streaming, Big Data Computation

External Researcher November, 2021 – May, 2022
Technical University of Crete *Chania, Greece*

– **Research Thesis:** "Random Forest for Big Data Streams at Apache Flink under Data Drifts." Achieved ≈ 70% decrease on Decision Tree size in a streaming setting through mathematical and machine learning optimization, while ≈ 90% stable accuracy throughout data drifts.

Keywords: Distributed Computation, Machine Learning, Scalable Computation, Data Stream Processing, Concept Drift Adaptation, Big Data

3. SKILLS

– **Programming Languages:** Python, Java, Scala, C++, Matlab, SQL, NoSQL, Solidity

– **Environments & Tools:** Apache Flink, Apache Spark, TensorFlow, Keras, Pandas, MapReduce (Hadoop), Server-Client Architecture, Cloud/Fog Computing, TPC-H

4.RELEVANT PROJECTS

– Credit Card Fraudulent Detection with Random Forest Feb 2021 - Sept 2021

Real-time fraud-detection system (FDS) for Credit Card Transactions using Adaptive Random Forest in Apache Spark platform for Big-Data. Techniques: Hoeffding Trees, Online Bagging, Boosting, Oversampling. Results: ≈ 92% accuracy and 95% F1-score. **(Ranked 2nd best)**

– Web Application Development using Docker Sept 2019 - Dec 2019

Design and implementation of independent services using Docker containers. Server-side implementation, asynchronous programming, https redirects, session variables. Development of user and cloud interface. **(Ranked 2nd best)**

– Evaluation of Machine Learning Algorithms for NPSLE classification Feb 2018 - Jun 2018

Robustness validation of ML classification algorithms: SVM, k-NN, Naïve Bayes, Random Forest. Exploration of feature reduction/selection methods: PCA, LDA and Pearson's correlation. **(Ranked 3rd best)**

– Database Management Project Feb 2017 - Jun 2017

Data management, data recovery, trigger deployment, implementation of Views using PostgreSQL functions. Query performance monitoring and updated view under JDBC protocol.

5. WORK EXPERIENCE

– Blockchain Developer Sept 2021 - Jan 2022

Ethereum Blockchain

Joined a group, building a base layer protocol for global, generic attestations.

– Web Search Evaluator April 2018 - Sept 2018

Appen Co.

Ensuring the accuracy, quality and relevance from research engine queries results. (Top 5% workers)

6. HONOURS & AWARDS

UMass CICS Scholarship for Best PhD Application (4,000$) 2022

University of Massachusetts Amherst

1st Place Entrepreneurship Initiative Start-up Pitch Greek Section 2020

Institute of Electrical and Electronics Engineers (IEEE)

7. LEADERSHIP EXPERIENCE

Chairman May 2019 - May 2020

IEEE TUC Student Branch

Workshop Instruction of *"Mathematical Shapes with Python"* Sept 2019

TUC WelcomeDay for freshmen

IEEEXtreme 2018 Ambassador Oct 2018

TUC Student Branch