Alexandros Angelakis

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Education

University of Crete Heraklion, Greece
MSc. Computer Science and Engineering. GPA: 9.58/10.00 Feb. 2024 - Present

- Thesis: Adaptive Mel-Frequency Cepstral Coefficients. Supervised by Dr. George Kafentzis.
- Teaching Assistant position for the Applied Mathematics for Engineers and Digital Signal Processing courses, including lecturing, supervising students and grading.
- Areas: Artificial Intelligence and Machine Learning- Signal Processing and Analysis.

University of Crete Heraklion, Greece
BSc. Computer Science, GPA: 8.77/10.00 Sept. 2019 - July 2023

- Thesis: Optimal Sensor Placement in Water Distribution Networks using graph traversal algorithms. Supervised by Dr. Yannis Pantazis.
- Teaching Assistant position for the Information System Analysis and Design, Probability and Applied Mathematics for Engineers courses, including lecturing, supervising students and grading.

Experience

IACM-FORTH Heraklion, Greece
Research Intern July 2022 - Present

- Developing NeuroDiMe, a library for neural-based estimation of divergences and metrics with applications in representation learning, generative modeling, statistics and signal processing. (PyTorch, JAX, Tensorflow)
- Supported by Apple Inc. since June 2024 through IACM.
- Developed algorithms for optimal sensor placement to detect and localize leakages in Water Distribution Networks (WDNs) using graph traversal methods. (Python, GeoPandas, NetworkX, GIS)
- Supervised by Dr. Yannis Pantazis.

Speech Signal Processing Laboratory (SSPL) Heraklion, Greece
Research Intern June 2024 - July 2024

- Extracted and analyzed spectral features of cough audio signals for Tuberculosis (TB) detection and performed classification between healthy and unhealthy samples using deep learning and machine learning techniques (Python, Sklearn, Tensorflow).
- Supervised by Dr. George Kafentzis.

Awards

Undergraduate Scholarship Sep. 2020,2021
State Scholarships Foundation
Awarded for academic excellence throughout undergraduate studies.

Chrysanthos and Anastasia Karidis Scholarship June 2021
University of Crete
Awarded to the University of Crete students who excelled in their High School exams.

Skills

Programming: Python, C, Java
Frameworks: PyTorch, Tensorflow, JAX, Scikit-Learn, Pandas, Seaborn, Matplotlib, Numpy
Databases: SQL, PostgreSQL
Languages: English (Proficient), Greek (Native)

Selected Projects

Diabetes Prediction Using Machine Learning and Class Balancing Techniques. An end-to-end ML pipeline for diabetes prediction, incorporating data preprocessing, class balancing techniques, model selection, and hyperparameter tuning. Employed nested cross-validation to compare multiple classifiers on a real-world dataset, emphasizing the impact of balanced data and robust evaluation, 2025. (Python, Machine Learning)

Digital Speech Processing Projects. MATLAB-based implementations covering voice activity detection, LPC coding, sinusoidal modeling, and speaker identification. Projects involve hands-on speech signal analysis, enhancement, and classification using real-world audio datasets, 2023. (MATLAB, Signal Processing, Speech Processing)

AlphaCompiler. A complete compiler and virtual machine for the Alpha programming language (JavaScript-like syntax), developed from scratch, 2022. (C, Lex, Yacc/Bison)

Volunteering

Presenter Feb. 2024

University of Crete, Computer Science Department

I assisted in organizing and conducting my department's outreach presentations for high school students at our facilities.

Peer Mentor Sep. 2022 - June 2023

University of Crete, Computer Science Department

I participated in the Student Peer Mentor program (STEER) in the Computer Science Department at the University of Crete, serving as a mentor to first-year Computer Science students.

Updated: April 2025