Alexandros Angelakis

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Experience

IACM, Foundation of Research and Technology, Hellas — Heraklion, Greece
Research Intern — July 2022 - Present

- Developed NeuroDiMe, a research-oriented Python library for neural-based estimation of divergences and metrics, with a unified framework for handling a broad family of statistical distances, including f-divergences, Integral Probability Metrics (IPMs). Designed with modularity and backend flexibility in mind, it supports PyTorch, JAX, and TensorFlow. Applications include representation learning (e.g., β-VAEs), generative modeling (GANs, VAEs). The project has been 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)

Speech Signal Processing Laboratory, UoC, CSD — 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).

Education

University of Crete — Heraklion, Greece
MSc. Computer Science and Engineering, Grade: 9.58/10.00 (Excellent) — Feb. 2024 - Present

- Thesis: Adaptive Mel-Frequency Cepstral Coefficients for speech signal processing.
- Areas: Artificial Intelligence and Machine Learning- Signal Processing and Analysis.

University of Crete — Heraklion, Greece
BSc. Computer Science, Grade: 8.77/10.00 (Excellent) — Sept. 2019 - July 2023

- Received Undergraduate Scholarships for academic excellence from IKY. (Sep. 2020, 2021, 2022)
- Awarded the Chrysanthos and Anastasia Karidis Scholarship for top performance in national entrance exams. (June 2021)

Skills

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

Selected Projects

Diabetes Prediction Using Machine Learning and Class Balancing Techniques. Developed an end-to-end ML pipeline for diabetes prediction using real-world data, with class balancing, model selection, and nested cross-validation for robust evaluation, 2025. (Python, Scikit-Learn)

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, Speech Signal 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.

Scout Member — 2013 - 2016
4th Air Scout System of Heraklion
Actively participated in the Scouts of Greece, developing leadership, teamwork, and practical skills through outdoor activities, community service, and international events.