Alexandros Angelakis

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Experience

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

- Developed NeuroDiMe, a Python library for neural-based estimation of statistical distances (e.g., f-divergences, IPMs) within a unified, modular framework supporting PyTorch, JAX, and TensorFlow. Applications include representation learning (β-VAEs), and generative modeling (GANs, VAEs). Supported by Apple Inc. through IACM since June 2024.
- 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 - Present

- 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).
- Assisted in testing a new multi-speaker Greek speech dataset (≈20 hours), including identifying State-of-the-Art models for training and fine-tuning in text-to-speech (TTS) systems.

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.
- Teaching Assistant position for the Applied Mathematics for Engineers and Digital Signal Processing courses, including lecturing, student supervision and grading.

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)
- Teaching Assistant position for the Applied Mathematics for Engineers, Probabilities and Information System Analysis and Design courses, including lecturing, student superivsion and grading.

Skills

Programming: Python, MATLAB, 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.