Evangelie Zachos

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Eligible via dual-citizenship to work in USA or EU

Interests

Machine learning, signal processing, inverse problems, data analytics, statistical inference, audio, unsupervised learning, RF network communications.

Career History

2020/12 -   **Junior AI and DSP Scientist**, Rajant

- performed data analytics and clustering for a variety of applications, including machine telemetry, audio classification, and human activity classification
- created ML Ops prototypes for pre-processing and feature extraction for modular ML pipelines
- developed scenario scripts and preliminary interfacing of C++ routing algorithm with Mathworks Network Simulator for mesh radio networks
- applied signal processing to a variety of applications, including motion sensor fusion, PPG signals, and audio for medical diagnostics
- provided iOS app development, testing, and design incorporating publisher-subscriber type-agnostic data flows and live-updating plotting

2020/6-9   **Software Engineering Intern**, Innovation Labs, Cisco

- used MATLAB to assist with the decoding and analysis of wifi packets collected via SDR
- wrote visualization code in python to sync timestamps of packets from OTA packet capture to SDR timestamps and to detect packets in one or the other
- built datastream and tuned neural network to replicate MATLAB decoding of wifi packets

2015-20   **Course Assistant**, Stanford University

- courses included Introductory Analysis and Linear Algebra, ODEs, Differential Theory of Curves and Surfaces, Elementary Number Theory, and Fundamental Concepts of Analysis
- was lauded by students for using examples, intuitively explaining abstract concepts, and tailoring teaching to students' individual needs and backgrounds

2014,6,8   **Summer Junior Instructor** at summer programs for mathematically talented high school students (SUMaC, MathILY, HCSSiM), teaching courses on topics including topology, information theory, noneuclidean geometry, group theory, and algebraic geometry

Skills

Programming Languages, proficient in: Python (including Jupyter), MATLAB, Swift and ***familiar with:*** C++, Java. Experience with tensorflow, spark, scikit learn.

Languages: English (native), German (functional), Greek (conversational), Japanese (lower intermediate).

Education

2015-20   **PhD in Mathematics**, *Stanford University*, under supervisor Andras Vasy.
Dissertation: "The X-Ray Transform On Asymptotically Euclidean Spaces"

- main project: focused on inverting the x-ray operator in asymptotically Euclidean space
- developed a new calculus to understand operator ellipticity in this new noncompact setting
- substantial reading in related fields, such as scattering theory, Fourier Integral Operators

Sampling of Applied Courses: Algorithms, Machine Learning Algorithms, Deep Learning, Bayesian Networks.

- course project: tuned a CNN to detect sentiment of audio sentences
- other coursework coding projects included computer vision, RNNs, and statistical inference

2014-2015 **Independent Study on Homogeneous Spaces and Spectral Geometry**
Universität Bonn, Bonn, Germany with supervisor Werner Ballmann

2010-2014 **A.B. Mathematics, magna cum laude**
Princeton University, Princeton, NJ
Independent work on Riemannian symmetric spaces and generalized spaces of nonpositive curvature

Awards and Honors

2014	**Election to Phi Beta Kappa**
2014	**Fulbright Student Award**, Germany
2014	**NSF Graduate Research Fellowship** in Geometric Analysis
2011	**Shapiro Prize for Academic Excellence**, Princeton University