Emmanouil Theodosis

Contact Information

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github.com/manosth
manosth.github.io

Research Interests Deep learning, sparse representations, theoretical machine learning, algebraic topology, nonlinear optimization, algebraic geometry, compressive sensing, tropical algebra

Education

Harvard University Sep 2019 - Present
PhD in Computer Science, GPA: 3.835/4.00
Advisor: **Demba Ba**

National Technical University of Athens Oct 2012 - Oct 2018
BSc & MSc in Electrical and Computer Engineering, GPA: 8.56/10
Thesis: "*Tropical analysis of algorithms on graphs*"
Advisor: **Petros Maragos**

Research Experience

Harvard University Sep 2019 - Present
Computation, Representations, and Inference in Signal Processing Lab (CRISP)
Research Assistant

National Technical University of Athens Feb 2017 - Jun 2019
Computer Vision, Speech Communication, and Signal Processing Lab (CVSP)
Research Assistant

Teaching Experience

ES 157: Biological Signal Processing Fall 2020
Harvard University
Instructor: **Demba Ba**

Publications

Conference papers

[1] Maragos, P. and **Theodosis, E.** "Multivariate tropical regression and piecewise-linear surface fitting". In *International Conference on Acoustics, Speech, and Signal Processing* (2020)
[paper]

[2] Retsinas, G., Filntisis, P., Efthymiou, N., **Theodosis, E.**, Zlatintsi, A., and Maragos, P. "Person identification using deep convolutional neural networks on short-term signals from wearable sensors". In *International Conference on Acoustics, Speech, and Signal Processing* (2020)
[paper]

[3] **Theodosis, E.** and Maragos, P. "Tropical modeling of weighted transducer algorithms on graphs". In *International Conference on Acoustics, Speech, and Signal Processing* (2019)
[paper] [poster]

[4] **Theodosis, E.** and Maragos, P. "Analysis of the Viterbi algorithm using tropical algebra and geometry". In *International Workshop on Signal Processing Advances in Wireless Communications* (2018)
[paper] [poster]

Book chapters

[5] Maragos, P. and **Theodosis, E.** "Tropical Geometry and Piecewise-Linear Approximation of Curves and Surfaces on Weighted Lattices". In *Shape Analysis: Euclidean, Discrete and Algebraic Geometric Methods*, edited by M. Breuss, A. Bruckstein, C. Kiselman, and P. Maragos, Springer, to appear.
[paper]

Preprints

[6] Tasissa, A., **Theodosis, E.**, Tolooshams, B., and Ba, D. "Dense and Sparse Coding: Theory and Architectures". *In submission* (2020)
[paper]

[7] Maragos, P., Charisopoulos, V., and **Theodosis, E.** "Tropical Geometry and Machine Learning". *In submission* (2020)
[paper]

[8] **Theodosis, E.** and Maragos, P. "A Robust Adaptive Pruning Algorithm Based on Tropical Geometry". In *arXiv* (2019)
[paper]

Honors and Awards

Gerondelis Foundation Scholarship May 2020
Awarded to Greek students pursuing graduate studies in the United States.

Robert L. Wallace Prize Fellowship Sep 2019
Awarded to outstanding candidates whose research is focuses on subjects related to the study of acoustics and noise.

"**The Great Moment of Education**" **Eurobank EFG Scholarship** Oct 2012
Achieved the highest score at the national exams amongst students of Nea Genia Ziridis.

Professional Service

Invited Reviewer: EUSIPCO 2020

Programming Skills

Languages: Python, C, MATLAB, HTML/CSS
Other: LaTeX, Unix, Git

Languages

Greek (*Native*), English (*Fluent*), French (*Basic*)