

## Emmanouil Theodosis

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

<b>Education</b>	<b>Harvard University</b> PhD in Computer Science, GPA: 3.835/4.00 Advisor: <b>Demba Ba</b>	Sep 2019 - Present
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<b>National Technical University of Athens</b> BSc & MSc in Electrical and Computer Engineering, GPA: 8.56/10 Thesis: “ <i>Tropical analysis of algorithms on graphs</i> ” Advisor: <b>Petros Maragos</b>	Oct 2012 - Oct 2018
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<b>Research Experience</b>	<b>Harvard University</b> <i>Computation, Representations, and Inference in Signal Processing Lab</i> ( <b>CRISP</b> ) Research Assistant	Sep 2019 - Present
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<b>National Technical University of Athens</b> <i>Computer Vision, Speech Communication, and Signal Processing Lab</i> ( <b>CVSP</b> ) Research Assistant	Feb 2017 - Jun 2019
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<b>Teaching Experience</b>	<b>ES 157: Biological Signal Processing</b> <i>Harvard University</i> Instructor: <b>Demba Ba</b>	Fall 2020
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**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., EFTHYMIU, 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:** L<sup>A</sup>T<sub>E</sub>X, Unix, Git

### Languages

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