

## Emmanouil Theodosis

<b>Contact Information</b>	33 Oxford Street Maxwell Dworkin 140 Cambridge, MA 02138, USA	<a href="mailto:etheodosis@g.harvard.edu">etheodosis@g.harvard.edu</a> <a href="https://github.com/manosth">github.com/manosth</a> <a href="https://manosth.github.io">manosth.github.io</a>
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**Research Interests** Deep learning theory, deep autoencoders, structured representations, theoretical machine learning, nonlinear optimization, tropical geometry, compressive sensing

<b>Education</b>	<b>Harvard University</b> PhD in Computer Science, GPA: 3.835/4.00 Advisor: <a href="#">Demba Ba</a>	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: <a href="#">Petros Maragos</a>	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> ( <a href="#">CRISP</a> ) 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> ( <a href="#">CVSP</a> ) 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: <a href="#">Demba Ba</a>	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)  
Links: [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)  
Links: [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)  
Links: [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)  
Links: [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.  
Links: [paper](#)

#### Preprints

- [6] **THEODOSIS, E.**, TOLOOSHAMS, B., TANKALA, P., TASISSA, A., AND BA, D. “On the convergence of group-sparse autoencoders”. In *submission* (2020)  
Links: [paper](#)
- [7] TASISSA, A., **THEODOSIS, E.**, TOLOOSHAMS, B., AND BA, D. “Towards improving discriminative reconstruction via simultaneous dense and sparse coding”. In *submission* (2020)  
Links: [paper](#)
- [8] MARAGOS, P., CHARISOPOULOS, V., AND **THEODOSIS, E.** “Tropical geometry and machine learning”. In *Proceedings of the IEEE*, to appear.  
Links: [paper](#)
- [9] **THEODOSIS, E.** AND MARAGOS, P. “A robust, adaptive pruning algorithm based on tropical geometry”. In *arXiv* (2019)  
Links: [paper](#)

#### Honors and Awards

- Robert L. Wallace Prize Fellowship** 2019-2021  
Awarded to outstanding candidates whose research is focuses on subjects related to the study of acoustics and noise. Received the award two consecutive years.
- Gerondelis Foundation Scholarship** May 2020  
Awarded to Greek students pursuing graduate studies in the United States.
- Thomaidio Award (Publications)** 2018  
Awarded to undergraduate students of the National Technical University of Athens who published a research paper before their graduation.
- “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:** AISTATS 2021, 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*)