

# Giannis Karamanolakis

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## Research Interests

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Machine Learning, Information Extraction, Natural Language Processing, Deep Learning.

## Professional and Research Experience

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### Graduate Research Assistant

09/2017 - now

*Columbia University, Department of Computer Science, New York, NY, United States.*

- Working on project: "Adaptive Information Extraction from Social Media for Actionable Inferences in Public Health" (pending submission to a data mining conference).
- Working on project: "Machine Learning for Personalization" (paper at DLRS @ RecSys 2018).
- Actively participating in the Machine Learning Group, NLP Group, and Database Research Group.

### Machine Learning Engineer

04/2016 - 08/2017

*Behavioral Signals, Los Angeles, United States (working remotely from Athens, Greece).*

- Trained statistical models for the recognition of core emotions from conversational speech data.
- Used speaker interaction patterns to predict Key Performance Indicators.
- Applied Active Learning and Semi-Supervised Learning for information extraction from recorded speech.

### Research Assistant

01/2016-06/2017

*"Athena" Research & Innovation Center, Institute for Language & Speech Processing, Athens, Greece.*

Supervisors: Alexandros Potamianos, Aggelos Gkiokas, Vassilis Katsouros.

- Applied Deep Learning for the fusion of multimodal (text, audio, visual) semantic representations.

### Research Intern

11/2015-2/2016

*NCSR "Demokritos", Computational Intelligence Laboratory, Athens, Greece.*

Supervisors: Theodoros Giannakopoulos, Stavros Perantonis.

- Developed audio-based classifiers for Soundscape Event Detection and Quality Estimation.

## Education

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### Ph.D. in Computer Science

09/2017 - now

*Columbia University, New York, NY, United States.*

- **Advisors:** Prof. Luis Gravano, Prof. Daniel Hsu.
- **Current GPA** (class requirements): 4.26/4.00.
- **Research Areas:** Machine Learning, Information Extraction, Natural Language Processing.

**M.Eng. in Electrical & Computer Engineering**

National Technical University of Athens, Athens, Greece.

09/2011 - 07/2017

- **Major:** Computer Science, GPA: 9.26/10.00 (top 2%).
- **Advisor:** Prof. Alexandros Potamianos.
- **Thesis:** "Grounding Word Semantic Representations to Acoustic and Visual Perceptual Modalities".

## Publications

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**Giannis Karamanolakis**, Daniel Hsu, and Luis Gravano. Submission to a data mining conference (long paper - double blind). In summary, we employ Multiple Instance Learning (MIL) in hierarchical deep learning models (CNNs & RNNs) for fine-grained text mining. We propose a new attention-based mechanism for the MIL aggregation function and apply our model to sentence-level sentiment classification and to the discovery of foodborne illness in online restaurant reviews.

**Giannis Karamanolakis**, Kevin Raji Cherian, Ananth Ravi Narayan, Jie Yuan, Da Tang, and Tony Jebara. **Item Recommendation with Variational Autoencoders and Heterogenous Priors**. In *RecSys 2018 Workshop on Deep Learning for Recommender Systems*, 2018.

Georgios Paraskevopoulos, **Giannis Karamanolakis**, Elias Iosif, Aggelos Pikrakis, and Alexandros Potamianos. **Sensory-Aware Multimodal Fusion for Word Semantic Similarity Estimation**. In *EUSIPCO 2017 Workshop on Multimodal Processing, Modeling, and Learning Approaches for Human-Computer/Robot Interaction (Multi-Learn)*, 2017.

**Giannis Karamanolakis**, Elias Iosif, Athanasia Zlatintsi, Aggelos Pikrakis, and Alexandros Potamianos. **Audio-based distributional semantic models for music auto-tagging and similarity measurement**. In *EUSIPCO 2017 Workshop on Multimodal Processing, Modeling, and Learning Approaches for Human-Computer/Robot Interaction (Multi-Learn)*, 2017.

**Giannis Karamanolakis**, Elias Iosif, Athanasia Zlatintsi, Aggelos Pikrakis, and Alexandros Potamianos. **Audio-Based Distributional Representations of Meaning Using a Fusion of Feature Encodings**. In *INTERSPEECH*, pages 3658–3662, 2016.

## Fellowships, Honors, and Awards

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<b>Gerondelis Foundation Scholarship</b> , New York, US	06/2018
<b>Joseph F. Traub Fellowship</b> , Columbia University, New York, US	04/2018
<b>Addressing the Opioid Epidemic, Design Challenge Award</b> , Columbia University, New York, US	12/2017
<b>Columbia Engineering Presidential Fellowship</b> , New York, US	08/2017 - 05/2022
<b>Eurobank EFG Scholarship</b> , Athens, Greece	06/2012
<b>Hellenic Mathematic Society "Euclides" Award</b> , Sitia, Greece	03/2010
<b>Hellenic Mathematic Society "Thales" Award</b> , Sitia, Greece	02/2009

## Technical Skills

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**Programming:** Python (PyTorch, Tensorflow, Keras), C++, Java, MATLAB, R, C.

**Agile Development & Project Management:** Git, JIRA, Jenkins, Scrum, Kanban.