Giannis Karamanolakis

Department of Computer Science
Columbia University
610 West 115th Street
New York, NY 10025

Phone: +1 (917) 331-8844
E-mail: `gkaraman@cs.columbia.edu`
WWW: `https://gkaramanolakis.github.io`
Office: Mudd 406, DSI, Columbia University (`map`)

Research Interests

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

Professional and Research Experience

Graduate Research Assistant   09/2017 - now
Columbia University, Department of Computer Science, New York, NY, United States.

Working on "Adaptive Information Extraction from Social Media for Actionable Inferences in Public Health" (pending submission to a data mining conference).

Working on "Deep Learning for Recommender Systems" (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

Ph.D. in Computer Science   09/2017 - now
Columbia University, New York, NY, United States.

Advisors: Prof. Luis Gravano, Prof. Daniel Hsu.

Current GPA: 4.26/4.00.

Research Areas: Machine Learning, Information Extraction, Natural Language Processing.

M.Eng. in Electrical & Computer Engineering 09/2011 - 07/2017
National Technical University of Athens, Athens, Greece.

>   **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

Giannis Karamanolakis, Daniel Hsu, and Luis Gravano. Submission to a data mining conference (long paper - double blind). 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

Gerondelis Foundation Scholarship, New York, US 06/2018

Joseph F. Traub Fellowship, Columbia University, New York, US, 04/2018

Addressing the Opioid Epidemic, Design Challenge Award, Columbia University, New York, US 12/2017

Columbia Engineering Presidential Fellowship, New York, US 08/2017 - 05/2022

Eurobank EFG Scholarship, Athens, Greece 06/2012

Hellenic Mathematic Society "Euclides" Award, Sitia, Greece 03/2010

Hellenic Mathematic Society "Thales" Award, Sitia, Greece 02/2009

Technical Skills

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

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