

# Giannis Karamanolakis

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## Research Interests

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Machine Learning, Information Extraction, Natural Language Processing, Deep Learning, Active Learning, Semi/Weakly-Supervised Learning, Text Classification/Generation, Semantic Parsing, Question Answering.

## Professional and Research Experience

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6. **Graduate Research Assistant** 09/2017 - now  
*Columbia University, Department of Computer Science, New York, NY, United States.*  
Advisors: Luis Gravano, Daniel Hsu
  - Developing weakly-supervised learning algorithms for text classification (LLD'19, WNUT'19, EMNLP'19/20, LOUHI'20).
  - Deploying systems for "Information Extraction from Social Media for Actionable Inferences in Public Health" (NSF).
5. **Research Scientist Intern** 05/2020 - 08/2020  
*Microsoft Research AI, Redmond, WA, United States.*  
Supervisors: Ahmed Awadallah, Subho Mukherjee, Guoqing Zheng (Language & Information Technologies team).
  - Developed an algorithm for semi-supervised learning with weak rules (under submission).
4. **Applied Scientist / Machine Learning Scientist Intern** 05/2019 - 12/2019  
*Amazon.com, Seattle, WA, United States.*  
Supervisor: Xin Luna Dong (Product Graph team).
  - Developed TXtract, a neural network for *large-scale* knowledge extraction from product descriptions (ACL'20 paper).
  - Improved product understanding through 15% higher coverage in knowledge graph construction (KDD'20 paper).
3. **Machine Learning Engineer** 04/2016 - 08/2017  
*Behavioral Signals, Los Angeles, United States (worked remotely from Athens, Greece).*
  - Trained statistical models for the recognition of core emotions/performance indicators from conversational speech.
2. **Research Assistant** 01/2016 - 06/2017  
*"Athena" Research & Innovation Center, Institute for Language & Speech Processing, Athens, Greece.*  
Supervisors: Alexandros Potamianos, Aggelos Gkiokas, Vassilis Katsourous.
1. **Research Intern** 11/2015 - 2/2016  
*NCSR "Demokritos", Computational Intelligence Laboratory, Athens, Greece.*  
Supervisors: Theodoros Giannakopoulos, Stavros Perantonis.

## Education

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2. **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.
1. **M.Eng. in Electrical & Computer Engineering** 09/2011 - 07/2017  
*National Technical University of Athens, Athens, Greece.*
  - **Advisor:** Prof. Alexandros Potamianos. **GPA:** 9.26/10.00 (top 2%).
  - **Thesis:** "Grounding Word Semantic Representations to Acoustic and Visual Perceptual Modalities".

## Selected Publications

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10. **Giannis Karamanolakis, Daniel Hsu, and Luis Gravano. Cross-Lingual Text Classification with Minimal Resources By Transferring a Sparse Teacher.** In *Findings of EMNLP*, 2020 (To Appear).
9. **Ziyi Liu, Giannis Karamanolakis, Daniel Hsu, and Luis Gravano. Detecting Foodborne Illness Complaints in Multiple Languages Using English Annotations Only.** In *EMNLP Workshop on Health Text Mining and Information Analysis*, 2020 (To Appear).
8. **Giannis Karamanolakis, Jun Ma, and Xin Luna Dong. TXtract: Taxonomy-Aware Knowledge Extraction for Thousands of Product Categories.** In *ACL*, 2020 (Oral).
7. **Xin Luna Dong, ..., Giannis Karamanolakis, ..., Christos Faloutsos, Andrew McCallum, and Jiawei Han. AutoKnow: Self-Driving Knowledge Collection for Products of Thousands of Types.** In *KDD*, 2020 (Oral).
6. **Giannis Karamanolakis, Daniel Hsu, and Luis Gravano. Leveraging Just a Few Keywords for Fine-Grained Aspect Detection Through Weakly Supervised Co-Training.** In *EMNLP*, 2019 (Oral).
5. **Giannis Karamanolakis, Daniel Hsu, and Luis Gravano. Weakly Supervised Attention Networks for Fine-Grained Opinion Mining and Public Health.** In *EMNLP Workshop on Noisy User-generated Text*, 2019 (Oral).
4. **Giannis Karamanolakis, Daniel Hsu, and Luis Gravano. Training Neural Networks for Aspect Extraction Using Descriptive Keywords Only.** In *ICLR 2nd Workshop on Learning from Limited Labeled Data*, 2019.
3. **Katy Ilonka Gero, Giannis Karamanolakis, and Lydia Chilton. Transfer Learning for Style-Specific Text Generation.** In *NeurIPS Workshop on Machine Learning for Creativity and Design*, 2018.
2. **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 Workshop on Deep Learning for Recommender Systems*, 2018 (Oral).
1. **Giannis Karamanolakis, Elias Iosif, Athanasia Zlatintsi, Aggelos Pikrakis, and Alexandros Potamianos. Audio-Based Distributional Representations of Meaning Using a Fusion of Feature Encodings.** In *INTER-SPEECH*, 2016 (Oral).

## Fellowships, Honors, and Awards

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| 8. <b>Leventis Foundation Scholarship</b> , New York, US   | 08/2019, 08/2020  |
| 7. <b>Ph.D. Service Award</b> , Columbia University, New York, US                                    | 05/2019           |
| 6. <b>Gerondelis Foundation Scholarship</b> , New York, US   | 06/2018           |
| 5. <b>Joseph F. Traub Fellowship</b> , Columbia University, New York, US                             | 04/2018           |
| 4. <b>Addressing the Opioid Epidemic, Design Challenge Award</b> , Columbia University, New York, US | 12/2017           |
| 3. <b>Columbia Engineering Presidential Fellowship</b> , New York, US                                | 08/2017 - 05/2022 |
| 2. <b>Eurobank EFG Scholarship</b> , Athens, Greece  | 06/2012           |
| 1. <b>Hellenic Mathematic Society “Euclides” &amp; “Thales” Awards</b> , Sitia, Greece               | 02/2009, 03/2010  |

## Technical Skills and Reviewer Activity

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- **Programming:** Python (PyTorch, Tensorflow, Keras, Pyro), C++, Java, MATLAB, R, C.
- **Agile Development & Project Management:** Git, JIRA, Jenkins, Scrum, Kanban.
- **Reviewer Activity:** NeurIPS'19/20, ACL'19, TKDD'19, WWW'19, IEEE-TETCI'18, CSL'17.