

# EVANGELIA SPILIOPOULOU

**E-mail:** spilieva@amazon.com

**LinkedIn:** evangelia-spiliopoulou-929052b2

**Phone:** +678-431-9091

## RESEARCH OBJECTIVE

---

My research focuses on commonsense reasoning in PLMs (pre-trained Language Models): more specifically how we can evaluate and reduce hallucination of generative models in problems with data limitations. My areas of expertise include Reasoning, Causality and Information Extraction, focusing on the study of entities and events in limited-data scenarios.

## EDUCATION

---

**Carnegie Mellon University** *2018 - 2022*  
Ph.D. in Language Technologies, School of Computer Science GPA: 4.00/4.00  
**Thesis:** Modeling Event Implications via Multi-faceted Entity Representations  
Committee: **Eduard Hovy** (advisor), Yonatan Bisk, Lori Levin, Alan Ritter

**Carnegie Mellon University** *2016 - 2018*  
M.Sc. in Language Technologies GPA: 4.00/4.00  
Advisor: Eduard Hovy

**Georgia Institute of Technology** *2012-2016*  
B.Sc. in Computer Science GPA: 3.6/4.0 (Highest Honor)

## SELECTED RESEARCH PROJECTS

---

**Event Implications on Entities** *June 2021-Aug 2022*  
*Thesis Project*

- How do events impact an entity's state? How can we teach LLMs what to learn, and apply it in unseen entities?

**Removing Data Bias for Real-time Crisis Events** *Sept 2019- May 2020*  
*Relevant Publication(s):* Event-Related Bias Removal for Real-time Disaster Events[2]

- Detect critical tweets in real-time crisis scenarios
- No data for the current event, few previous events of similar nature annotated
- Data bias problem: use adversarial techniques to retain only the useful information for the task

**Definition Frames** *Mar 2019- May 2020*  
*Relevant Publication(s):* Definition Frames: Using Definitions for Hybrid Concept Representation[3]

- Design explainable entity representations via the use of definitions
- Representations with structure help us identify which information is important: less data needed

## WORK EXPERIENCE & FUNDED PROJECTS

---

**Amazon, AWS AI Labs** *Oct 2022-Now*  
*Applied Scientist II*

- Manager: Jie Ma
- (Scrivener project) Language generation focusing on data-to-text scenarios
- (Bedrock project) Building foundational large language models (LLMs)

**Carnegie Mellon University**  
*DARPA, World Modelers project*

*April 2018-Feb 2022*

- Advisor: Eduard Hovy
- Design & Implementation of SOFIA (code)
- Detect causal links & events from noisy documents, real-time

**Dataminr Inc.**  
*NLP Research Intern, Manager: Joel Tetreault*

*May-Aug 2020*

- Detect important sub-events from twitter streams for disaster events
- Relevant Publication(s): A Novel Framework for Detecting Important Subevents from Crisis Events via Dynamic Semantic Graphs [1]

**Carnegie Mellon University**  
*DARPA, DEFT project*

*April 2017-2018*

- Advisor: Eduard Hovy
- Detecting events & arguments from news articles
- Relevant Publication(s): Event Detection Using frame-semantic parser[4]

**Carnegie Mellon University**  
*MetLife project*

*Aug 2016-April 2017*

- Advisor: Anatole Gershman
- Anomaly detection on health insurance data based on medical history, diagnosis & self-reports

**Logitech Inc.**  
*Software Engineer Intern, Manager: William Prescott*

*May-Aug 2016*

- Research on dynamic human-tracking based on motion frequency

**Georgia Institute of Technology**  
*Undergraduate Research Assistant, Design & Intelligence Lab*

*2014-2016*

- Advisor: Ashok Goel
- Knowledge extraction into graphs from biology papers for bio-inspired design
- Effort to commercialize our application in finance sector, via NSF i-Corps program
- Relevant Publication(s): Intelligent Search for Biologically-Inspired Design [6]

## **PUBLICATIONS**

---

1. Li, A.H., Shang, M., **Spiliopoulou, E.**, Ma, J., Ng, P., Wang, Z., Min, B., Wang, W., McKeown, K., Castelli, V. and Roth, D., 2023. Few-Shot Data-to-Text Generation via Unified Representation and Multi-Source Learning. In Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers), pages 16171–16189, Toronto, Canada. Association for Computational Linguistics.
2. **Spiliopoulou, E.**, Pagnoni, A., Bisk, Y., Hovy, E. (2022, December). EvEntS ReaLM: Event Reasoning of Entity States via Language Models. In Proceedings of the 2022 Conference on Empirical Methods in Natural Language Processing, pages 1982–1997, Abu Dhabi, United Arab Emirates.
3. **Spiliopoulou, E.**, Kumar, S., Tetreault, J., Jaimes, A. (2021). *SD<sup>2</sup>SG*: A Novel Framework for Detecting Important Subevents from Crisis Events via Dynamic Semantic Graphs. In Proceedings of the Seventh Workshop on Noisy User-generated Text (W-NUT 2021), EMNLP.

4. **Spiliopoulou, E.**, Medina, S., Hovy, E., Hauptmann, A. G. (2020, November). Event-Related Bias Removal for Real-time Disaster Events. In Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing: Findings (pp. 3858-3868).
5. **Spiliopoulou, E.**, Pagnoni, A., Hovy, E. (2020, December). Definition Frames: Using Definitions for Hybrid Concept Representations. In Proceedings of the 28th International Conference on Computational Linguistics (pp. 3060-3068).
6. **Spiliopoulou, E.**, Hovy, E., Mitamura, T. (2017, August). Event detection using frame-semantic parser. In Proceedings of the Events and Stories in the News Workshop (pp. 15-20).
7. Prabhume, S., Choudhary, S., **Spiliopoulou, E.**, Bogart, C., Rose, C., Black, A. W. (2017, August). "Linguistic Markers of Influence in Informal Interactions." In Proceedings of the Second Workshop on NLP and Computational Social Science (pp. 53-62).
8. Rugaber, S., Bhati, S., Goswami, V., **Spiliopoulou, E.**, Azad, S., Koushik, S., ... and Goel, A. (2016). Knowledge extraction and annotation for cross-domain textual case-based reasoning in biologically inspired design. In Case-Based Reasoning Research and Development: 24th International Conference, ICCBR 2016, Atlanta, GA, USA, October 31-November 2, 2016, Proceedings 24 (pp. 342-355). Springer International Publishing.
9. **Spiliopoulou, E.**, Rugaber, S., Goel, A., Chen, L., Wiltgen, B., Jagannathan, A. K. (2015, March). Intelligent search for biologically inspired design. In Proceedings of the 20th International Conference on Intelligent User Interfaces Companion (pp. 77-80).

## TEACHING EXPERIENCE

---

### Language and Statistics, Grad level

*Fall 2019*

Instructor: Bhiksha Ramakrishnan. Carnegie Mellon University.

### Computational Semantics, Grad level

*Spring 2019*

Instructor: Eduard Hovy. Carnegie Mellon University.

### Design & Analysis of Algorithms, Undergrad level

*Spring 2016*

Instructor: Milena Mihail. Georgia Institute of Technology.

## SKILLS

---

**Programming Languages:** Python, Java, Basics of C, C++ and R

**ML Frameworks:** PyTorch, Theano, Tensorflow, scikit-learn

**NLP tools & resources:** CoreNLP, NLTK, WordNet, FrameNet

**Foreign Languages:** Greek (native), English (fluent), French (proficient), Italian (intermediate)

## EXTRA-CURRICULAR

---

Department rep in Graduate Student Association

*2020 - Now*

Member of Academic Affairs Committee

NSF I-Corps program

*Summer 2015*

-Customer discovery for our knowledge discovery tool [6] (student lead, team of 4)

-Collaboration with finance R&D (Morgan Stanley, CapitalOne, CitiBank)