

Emily LeBlanc, PhD

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Location: Alexandria, Virginia

Recent Positions

Date	Position	Institution
April 2024 – Present	Prompt Engineer	ThinkCERCA <i>Data Science Team</i>
June 2023 – April 2024	PhD Data Partner	Remotasks <i>Prompt Engineering Contractor</i>
March 2023 – June 2023	PhD Data Partner	Scale AI <i>Prompt Engineering Contractor</i>
January 2022 – March 2023	Software Developer	Independent
November 2019–November 2021	Computer Scientist Karles Fellow	U.S. Naval Research Laboratory <i>Navy Center for Applied Research in Artificial Intelligence</i>
January 2019–March 2019	Lead Teaching Assistant	Drexel University <i>College of Computing and Informatics</i>
March 2017–June 2019	Ph.D. Candidate	Drexel University <i>College of Computing and Informatics</i>
June 2016–September 2016, June 2015–September 2015	Graduate Research Intern	GE Global Research <i>Knowledge Discovery Lab</i>
September 2013–December 2018	Graduate Research Assistant	Drexel University <i>College of Computing and Informatics</i>

Research and Professional Experience

Prompt Engineering (ThinkCERCA) – April 2024-present

Developing LLM prompts for educational text applications, evaluating prompt performance, providing support to understand prompt engineering best practices. Developing LLM prompts for text applications, evaluating prompt performance, providing support to understand prompt engineering best practices.

Generative Model Training (Scale AI & Remotasks) – March 2023-April 2024

Helping train LLMs in my areas of expertise including science, mathematics, and coding. Primary responsibilities include crafting high-quality prompts and ensuring response quality. Tapped for multiple

special training projects.

Flavor Brain AI (independent) – 2022-2023

Exploring Artificial Intelligence techniques for augmenting domain expertise. Developing approaches and software prototypes. This work is ongoing as an independent research project.

Towards a Cognitive Model of Norm-guided Blaming (U.S. Naval Research Laboratory) – 2019-2021

Researcher in the Interactive Systems section of the Navy Center for Applied Research in Artificial Intelligence. Project funded by the Jerome and Isabella Karle Distinguished Scholar Fellowship.

Explaining Actual Causation via Reasoning About Actions and Change (Drexel University) – 2015-2019

Researched and developed a novel theoretical framework for representing and reasoning about actual causation and investigated the framework's properties. Explored applications of the work in Question Answering and Information Retrieval.

Virtual Nondestructive Evaluation Laboratory for Highway Structures (Federal Highway Administration, Drexel University) – 2017-2019 Worked on a team to develop an interactive, web-based tool that allows users – engineers, researchers, students, service providers, and bridge owners and inspectors – to engage in simulations of real bridges.

Action-Centered Information Retrieval (Drexel University) – 2016-2018

Explored semantic linking of queries and documents for an IR task in which documents describe sequences of events and queries are about the state of the world after such events. Proposed an action language based formalization and automation of the IR task using Answer Set Programming.

Natural Language Processing and Aviation Software (GE Global Research) – 2016

Application of previous Natural Language Processing work with the company to enable use of services across GE businesses. Co-inventor on an application related to aviation software.

Linguistic Analysis of Health Records (GE Global Research) – 2015

Research and application of Natural Language Processing techniques for discovering specific relationships in patient health records. Prototype automates the feature-based discovery of these relationships.

The Informatics of Making (NSF Inspire) – 2014

Investigation of representing and reasoning about materials science and engineering knowledge towards establishing formal information models to bridge design and additive manufacturing.

Content-Based Mobile Edge Networking (DARPA) – 2013

Development and support of military doctrine-based ontologies for use in specialized tactical edge MANETs (mobile ad-hoc networks).

Select Publications

- **Towards a Model of the Dynamics of Norm-guided Blaming.** Emily LeBlanc. *34th International Workshop on Qualitative Reasoning*, 2021.
- **Reasoning about Problems of Actual Causation using an Action Language Approach.** Emily LeBlanc, Marcello Balduccini, Joost Vennekens. *35th International Conference on Logic Programming (ICLP 2019), Technical Report*, 2019.
- **Explaining Actual Causation via Reasoning about Actions and Change.** Emily LeBlanc, Marcello

Balduccini, Joost Vennekens. *16th edition of the European Conference on Logics in Artificial Intelligence (JELIA 2019)*, 2019.

- **Action-Centered Information Retrieval.** Marcello Balduccini, Emily LeBlanc. *Theory and Practice of Logic Programming Journal*, 2019.
- **CASP Solutions for Planning in Hybrid Domains.** Marcello Balduccini, Daniele Magazzeni, Marco Maratea, Emily LeBlanc. *Theory and Practice of Logic Programming Journal, Special Issue on Constraint Logic Programming*, 2016.
- **Knowledge Representation, Natural Language Processing, and Question Answering Towards Domain-Specific Cognitive Computing.** Emily C. LeBlanc. Candidacy survey, available upon request.
- **Military Ontologies for Information Dissemination at the Tactical Edge.** Emily LeBlanc, Duc N. Nguyen, Marcello Balduccini, William C. Regli, Joseph B. Kopena, and Thomas Wambold. *In IJCAI15 Joint Ontology Workshops (JOWO)*, 2015.
- **Towards a Content-Based Materials Science Discovery Network.** Emily C. LeBlanc, Marcello Balduccini, William C. Regli *Papers from the AAAI-2014 Workshop on Discovery Informatics, Quebec City, Quebec, July 2014*.

Patents

- US 2019/0073426 A1: *Action-centered Information Retrieval*, Marcello Balduccini and Emily LeBlanc.

Professional Skills

- **Software development:** Python, Clojure, Answer Set Programming, OWL/RDF/SPARQL, HTML/CSS, REST, SQL, Java, C/C++
- **Tools/platforms:** React.js, Flask, Protégé, numpy, scipy, Pandas, AWS, Bash, \LaTeX , MS Office, Git

Education

Ph.D.	June 2019	Drexel University	Computer Science
Master of Science	June 2017	Drexel University	Computer Science
Bachelor of Science	May 2013	Temple University	Computer Science

Membership and Service

1. Member of Texas Action Group (TAG), Upsilon Pi Epsilon Honors Society (UPE).
2. Program Committee member of the 16th International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR).
3. Co-organizer and chair of 1st, 2nd, 3rd, and 4th Workshop on Causal Reasoning and Explanation in Logic Programming (CAUSAL 2019-2022), a workshop that co-located with the International Conference on Logic Programming (ICLP) and International Conference on Logic Programming and Nonmonotonic Reasoning (LPNMR).
4. Conference Review: KR 2014, IJCAI 2015-KR, AAAI-15, KR 2015, IJCAI 2016, LPNMR 2016, AAAI-16, IJCAI 2016, ICLP 2016, KnowPros 2016, AAAI-17, ICLP 2017, PADL 2018, ICLP 2018, CogSci 2020, CogSci 2021, LPNMR 2022.
5. Journal Review: *Theory and Practice of Logic Programming* (2017), *Annals of Mathematics and Artificial Intelligence* (2018).