ABSTRACT

Language "in the wild" is complex and ambiguous and relies on a shared understanding of the world for its interpretation. Most current NLP methods represent language by learning word co-occurrence patterns from massive amounts of linguistic data. This representation can be very powerful, but it is insufficient to capture the meaning behind written and spoken communication.

In this talk, I will motivate neural-symbolic representations for dealing with these challenges. On the one hand, symbols have inherent explanatory power, and they can help us express domain knowledge and enforce consistency across different decisions. On the other hand, expressive distributed representations allow us to leverage the strengths of statistical language models to make sense of large amounts of linguistic data. I will introduce a holistic framework that covers all stages of the neural-symbolic pipeline: modeling, learning, inference, and its application for analyzing discourse in real-world scenarios and show its advantages with respect to end-to-end neural approaches and traditional statistical relational learning methods.

BU Faculty of Computing & Data Sciences

Colloquium Series

NEURAL-SYMBOLIC MODELING FOR NATURAL LANGUAGE DISCOURSE

Monday, February 28, 1:00 PM
MCS 157, Hariri Seminar Room
111 Cummington Mall

GUEST
Maria Pacheco

PhD Candidate in the Department of Computer Science at Purdue University.

Maria Pacheco

Maria Pacheco is a PhD Candidate in the Department of Computer Science at Purdue University. Her research focuses broadly on neural-symbolic methods to model natural language discourse scenarios, such as analyzing conversations, argumentation, and narratives. Before joining Purdue, she spent a couple of years working as a data scientist and software engineer for various startups in her hometown of Caracas, Venezuela. She has published in top Natural Language Processing conferences and journals and has delivered tutorials on neural-symbolic modeling for NLP to diverse audiences, including an IJCAI '21 tutorial and an upcoming COLING '22 tutorial. Maria is a recipient of the 2021 Microsoft Research Dissertation Grant, and one of the main organizers of the LatinX in AI events in NLP.