Maria Leonor Pacheco

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Education

2022   **Ph.D. Computer Science,** Purdue University (expected).
Thesis: *Neural-Symbolic Modeling for Natural Language Discourse*

2013   **B.Sc. Computer Science and Engineering,** Universidad Simon Bolivar.
Honors thesis: *Information Extraction from Twitter During Mass Emergency Situations.*

Employment History

Jan 2017 – *present*   **Graduate Research Assistant,** Natural Language Processing Group, Dept. of Computer Science, Purdue University. IN, USA.

May 2021 – Jul 2021   **Research Intern,** Knowledge Technologies and Intelligent Experiences Group, Microsoft Research. Remote, USA.

May 2019 – Jul 2019   **Research Intern,** Conversational Search Group @ Bing, Microsoft. WA, USA.

Jun 2018 – Aug 2018   **Research Intern,** Twitter Cortex. CA, USA.

Aug 2015 – Dec 2016   **Graduate Teaching Assistant,** Dept. of Computer Science, Purdue University.

Nov 2013 – Jul 2015   **Data Scientist,** Predictvia. Caracas, Venezuela.

Sep 2011 – Jul 2012   **Visiting Student Researcher,** Knowledge Systems Lab, Information and Management Systems Eng. Dept., Nagaoka University of Technology. Niigata, Japan.

Publications   (* indicates co-first authorship)

Refereed Journal Articles

1. **Pacheco**, **M. L.**, & Goldwasser, D. (2021). Modeling content and context with deep relational learning. *Transactions of the Association for Computational Linguistics*, *9*, 100–119. To be presented at NAACL 2021. 🔗 doi:10.1162/tacl_a_00357

Refereed Conference Proceedings

1. Widmoser, M. *., **Pacheco, M. L. ***, Honorio, J., & Goldwasser, D. (2021). Randomized deep structured prediction for discourse-level processing. In *Proceedings of the 16th conference of the european chapter of the association for computational linguistics: Main volume* (pp. 1174–1184). Retrieved from 🔗 https://www.aclweb.org/anthology/2021.eacl-main.100

2. Lee, I.-T., **Pacheco**, **M. L.**, & Goldwasser, D. (2021). Modeling psychological states through an entity-based narrative graph. In *Proceedings of the 2021 conference of the North American chapter of the Association for Computational Linguistics (to appear), NAACL 2021.*

3. Lee, I.-T., **Pacheco**, **M. L.**, & Goldwasser, D. (2020). Weakly-supervised modeling of contextualized event embedding for discourse relations. In *Findings of the Association for Computational Linguistics: EMNLP 2020* (pp. 4962–4972). 🔗 doi:10.18653/v1/2020.findings-emnlp.446

4. Jain, A., **Pacheco**, **M. L.**, Lancette, S., Goindani, M., & Goldwasser, D. (2020). Identifying collaborative conversations using latent discourse behaviors. In *Proceedings of the 21th annual meeting of the Special Interest Group on Discourse and Dialogue, SIGDIAL 2020* (pp. 74–78). Retrieved from 🔗 https://www.aclweb.org/anthology/2020.sigdial-1.10

5 Jero, S., **Pacheco**, **M. L.**, Goldwasser, D., & Nita-Rotaru, C. (2019). Leveraging textual specifications for grammar-based fuzzing of network protocols. In *Proceedings of the AAAI Conference on Artificial Intelligence* (Vol. 33, pp. 9478–9483). 🔗 doi:10.1609/aaai.v33i01.33019478

6 **Pacheco**, **M. L.**, Lee, I.-T., Zhang, X., Zehady, A. K., Daga, P., Jin, D., … Goldwasser, D. (2016). Adapting event embedding for implicit discourse relation recognition. In *Proceedings of the CoNLL-16 shared task* (pp. 136–142). 🔗 doi:10.18653/v1/K16-2019

Papers Under Submission

1 **Pacheco**, **M. L.**, von Hippel, M., Weintraub, B., Nita-Rotaru, C., & Goldwasser, D. (2021). Automated attack synthesis by extracting finite state machines from protocol specification documents. *Under Submission*.

2 Roy, S., **Pacheco**, **M. L.**, & Goldwasser, D. (2021). Identification of morally-targeted entities in political tweets using deep relational learning. *Under Submission*.

Refereed Workshops

1 **Pacheco**, **M. L.**, & Goldwasser, D. (2020). Neural-symbolic modeling for natural language discourse. *ICML 2020 workshop on Bridge Between Perception and Reasoning*. Retrieved from 🔗 https://logicalreasoninggnn.github.io/papers/16.pdf

2 Widmoser, M. *., **Pacheco, M. L. ***, Honorio, J., & Goldwasser, D. (2020). Randomized deep structured prediction for argumentation mining. *EMNLP 2020 workshop on Structured Prediction for NLP*.

3 **Pacheco**, **M. L.**, Dalal, I., & Goldwasser, D. (2018). Leveraging representation and inference through deep relational learning. *NeurIPS 2018 workshop on Relational Representation Learning*. Retrieved from 🔗 https://r2learning.github.io/assets/papers/CameraReadySubmission%2042.pdf

4 Lee, I.-T., Goindani, M., Li, C., Jin, D., Johnson, K. M., Zhang, X., … Goldwasser, D. (2017). PurdueNLP at SemEval-2017 task 1: Predicting semantic textual similarity with paraphrase and event embeddings. In *Proceedings of the 11th international workshop on Semantic Evaluation (SemEval-2017)* (pp. 198–202). 🔗 doi:10.18653/v1/S17-2029

5 Zhang, X. *., **Pacheco, M. L. ***, Li, C., & Goldwasser, D. (2016). Introducing DRAIL – a step towards declarative deep relational learning. In *Proceedings of the workshop on Structured Prediction for NLP* (pp. 54–62). 🔗 doi:10.18653/v1/W16-5906

Invited Talks, Seminars and Tutorials

- **NS4NLP: Neural-Symbolic Modeling for NLP**, Upcoming tutorial at the 30th International Joint Conference on Artificial Intelligence (IJCAI-21), August 2021, Montreal, Canada.

- **Modeling Content and Context with Deep Relational Learning.** Orlando Machine Learning and Data Science Meetup, March 20, 2021, Virtual

- **Neural-Symbolic Modeling for Natural Language Discourse.** 1st annual retreat of the Purdue Center for Programming Principles and Software Systems, August 31, 2020, Virtual

- **DRaiL: Towards Declarative Deep Relational Learning.** Midwest Speech and Language Days / Computational Linguistics Colloquium, May 4-5, 2017, Toyota Technological Institute at Chicago

- **Improving Protocol Vulnerability Discovery via Semantic Interpretation of Textual Specifications.** The 18th Annual CERIAS Security Symposium, April 18-19, 2017, Purdue University

- **Event Embeddings for Implicit Discourse Relations.** May 17, 2016, Universidad Simon Bolivar

Teaching Experience

Purdue University

Instructor. Problem Solving and Object Oriented Programming (2 semesters). Taught lectures of 50-100+ students, developed assignments and exams, and managed a team of 20+ graduate and undergraduate TAs.

Teaching Assistant. Problem Solving and Object Oriented Programming (2 semesters). Guided lab sections of 10-20 students, held office hours, developed and graded assignments.

Awards and Scholarships

Teaching Academy Graduate Teaching Award. Selected by the Computer Science Department at Purdue University to be a recipient of the award in the year 2017.

JASSO Student Exchange Support Program. Scholarship for Short-Term Study in Japan for the academic year 2011-2012.

Academic and Institutional Service

Reviewer

AAAI 2021, NAACL 2021, ACL 2021, EMNLP 2021, ACM Computing Surveys

Organizing

Social Media Co-Chair for SIGDIAL 2021

Diversity & Inclusion

CS Representative, Purdue Graduate Women in Science Programs (2021 - 2022)

Diversity Chair, Purdue CS Graduate Student Board (2020 - 2021)

Graduate Student Representative, Purdue CS Diversity Task Force (2020 - 2021)

Global Ambassador, Purdue Graduate School (2018 - 2021)

Skills

Languages

Spanish (Native), English (Fluent), Japanese (N3), German (A2).

Coding

Python, Java, C, C++, R, Matlab, Git, SQL, LaTeX, …