

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 – Aug 2021 📖 **Research Intern**, Microsoft Research. Remote, USA.
- May 2019 – Jul 2019 📖 **Research Intern**, Conversational Search Group at Bing, Microsoft. WA, USA.
- Jun 2018 – Aug 2018 📖 **Research Intern**, Twitter Cortex (ML group) at Twitter. 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. Presented at NAACL-HLT 2021.
🔗 doi:10.1162/tacl_a_00357

Refereed Conference Proceedings

- 1 Lee, I.-T., Pacheco, M. L., & Goldwasser, D. (2021). Modeling human mental states with an entity-based narrative graph. In *Proceedings of the 2021 Conference of the North American Chapter of the Association for Computational Linguistics: Human Language Technologies, NAACL-HLT 2021* (pp. 4916–4926). Retrieved from 🔗 <https://www.aclweb.org/anthology/2021.naacl-main.391>
- 2 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, EACL 2021* (pp. 1174–1184). Retrieved from 🔗 <https://www.aclweb.org/anthology/2021.eacl-main.100>
- 3 Roy, S., Pacheco, M. L., & Goldwasser, D. (2021). Identifying morality frames in political tweets using relational learning. In *Proceedings of the 2021 Conference on Empirical Methods in Natural Language Processing, EMNLP 2021*. (to appear).
- 4 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

- 5 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>
- 6 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](https://doi.org/10.1609/aaai.v33i01.33019478)
- 7 **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](https://doi.org/10.18653/v1/K16-2019)

Papers Under Submission

- 1 **Pacheco, M. L.**, von Hippel, M., Weintraub, B., Goldwasser, D., & Nita-Rotaru, C. (2021). Automated attack synthesis by extracting finite state machines from protocol specification documents. *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://logicalreasoningnn.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](https://doi.org/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](https://doi.org/10.18653/v1/W16-5906)

Invited Talks, Tutorials, Seminars and Symposia

- **NS4NLP: Neural-Symbolic Modeling for NLP.** Tutorial at the 30th International Joint Conference on Artificial Intelligence, IJCAI-21 (Aug. 20, 2021)
- **Neural-Symbolic Modeling for Natural Language Discourse.** Microsoft Research (Jun. 17, 2021), 1st annual retreat, Purdue Center for Programming Principles and Software Systems (Aug. 31, 2020)
- **Modeling Content and Context with Deep Relational Learning.** Boston Computation Club (June 13, 2021), Orlando Machine Learning and Data Science Meetup (March 20, 2021)
- **Structured Prediction @ PurdueNLP.** CS Student Research Showcase, Purdue Univ. (Sep. 8, 2017)
- **DRail: Towards Declarative Deep Relational Learning.** Midwest Speech and Language Days / Computational Linguistics Colloquium, Toyota Technological Institute at Chicago (May 4-5, 2017)
- **Improving Protocol Vulnerability Discovery via Semantic Interpretation of Textual Specifications.** The 18th Annual CERIAS Security Symposium, Purdue University (Apr. 18-19, 2017)
- **Adapting Event Embeddings for Implicit Discourse Relation Recognition.** CS Student Research Showcase, Purdue University (Sep. 12, 2016)

Invited Talks, Tutorials, Seminars and Symposia (continued)

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

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

- **2021 Microsoft Research Dissertation Grant.** \$25,000 towards dissertation expenses.
- **2017 Teaching Academy Graduate Teaching Award.** Selected by the CS Dept. at Purdue.
- **2011-2012 JASSO Student Exchange Support Program.** Scholarship for short-term study in Japan.

Academic and Institutional Service

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| Reviewing | ■ AAI 2021, NAACL 2021, ACL 2021, EMNLP 2021, ACM Computing Surveys |
| Organizing | ■ Co-Chair , NAACL 2022 Student Research Workshop |
| | ■ Social Media Co-Chair , SIGDIAL 2021 |
| Diversity & Inclusion | ■ Leadership Team , Purdue Graduate Women in Science Programs (2021 - 2022) |
| | ■ Diversity Chair , Purdue CS Graduate Student Board (2020 - 2021) |
| | ■ Committee Member , Purdue CS Dept. DEI Committee (2020 - 2021) |
| | ■ Global Ambassador , Purdue Graduate School (2018 - 2021) |

Skills

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| Languages | ■ Spanish (Native), English (Fluent), Japanese (N3), German (A2). |
| Coding | ■ Python, Java, C, C++, R, Matlab, Git, SQL, L ^A T _E X, ... |