

# Lara J. Martin, Ph.D.

[laramartin.net](http://laramartin.net)

Research Areas: Human-Centered Artificial Intelligence, Computational Creativity, Automated Story Generation, Speech Processing, Affective Computing

## EDUCATION

Aug 2015 – Dec 2020

### GEORGIA INSTITUTE OF TECHNOLOGY – Atlanta, GA

+ School of Interactive Computing, College of Computing

Ph.D. Human-Centered Computing

Advisor: Dr. Mark O. Riedl

Thesis: Neurosymbolic Automated Story Generation

Certifications:

CITI Collaborative Institutional Training Initiative (10/2015)

[Tech to Teaching](#) Certification (Summer 2018)

Aug 2013 – Aug 2015

### CARNEGIE MELLON UNIVERSITY – Pittsburgh, PA

+ Language Technologies Institute, School of Computer Science

Master of Language Technologies

Sept 2009 – May 2013

### RUTGERS UNIVERSITY – New Brunswick, NJ

+ School of Arts and Sciences

Double Major:

B.S. Computer Science and Linguistics – Honors, Magna Cum Laude

## EMPLOYMENT

Jan 2021 – Present

### POSTDOCTORAL RESEARCHER

[Computing Innovation Fellow \(CIFellow\)](#)

+ Computer and Information Science, University of Pennsylvania

Aug 2015 – Dec 2020

### GRADUATE RESEARCH ASSISTANT

+ School of Interactive Computing, Georgia Institute of Technology

May 2017 – Aug 2017

### APPLIED SCIENTIST INTERN

+ Alexa Smart Home Machine Learning, Amazon.com Inc

Sept 2013 – Aug 2015

### GRADUATE RESEARCH ASSISTANT

+ Language Technologies Institute, Carnegie Mellon University

## TEACHING

Summer 2018

### Georgia Institute of Technology INSTRUCTOR OF RECORD

- + CS 3790 Introduction to Cognitive Science

Fall 2016

### GRADUATE TEACHING ASSISTANT

Fall 2015

- + CS 3600 Introduction to Artificial Intelligence, Dr. Mark Riedl
- + CS/Psych 3790 Introduction to Cognitive Science, Dr. Rosa I. Arriaga

### OUTREACH

Summer 2019

- + Clarks Scholars Summer Python Bootcamp  
*Created syllabus & lesson plan*

Summer 2016

- + Tech Camp, Georgia Institute of Technology & Bridge Academy  
*Guided students on "maker" projects*

### Carnegie Mellon University

### OUTREACH

2013-2015

- + Women@SCS Club & SCS4All Club for Promoting Diversity and Understanding in Computing, Carnegie Mellon University  
*Taught CS basics to middle schoolers*

### Rutgers University – New Brunswick

### OUTREACH

2012-2013

- + Douglass-DIMACS Computing Corps, Rutgers University  
*Taught CS basics to middle schoolers*

Fall 2010

### PEER LEADER FOR RECITATION

- + 198:111 Introduction to Computer Science, Pradip Hari

## PUBLICATIONS

### Refereed Conference

\* Presented

Prithviraj Ammanabrolu\*, Ethan Tien, Wesley Cheung, Zhaochen Luo, William Ma, **Lara J. Martin\***, & Mark O. Riedl. "Story Realization: Expanding Plot Events into Sentences." *In Proceedings of the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20)*, New York, New York, February 7-12, 2020 ([pdf](#), [arXiv](#), [poster](#), [code](#)). [20.6% Acceptance Rate]

Pradyumna Tambwekar, Murtaza Dhuliawala\*, **Lara J. Martin\***, Animesh Mehta, Brent Harrison, & Mark O. Riedl. "Controllable Neural Story Plot Generation via Reward Shaping." *In Proceedings of the Twenty-Eighth International Joint Conference on Artificial Intelligence (IJCAI 2019)*, Macao, China, August 10-16, 2019 ([pdf](#), [arxiv](#), [slides](#), [poster](#)). [17.9% Acceptance Rate]

**Lara J. Martin\***, Prithviraj Ammanabrolu, Xinyu Wang, William Hancock, Shruti Singh, Brent Harrison, & Mark O. Riedl. "Event Representations for Automated Story Generation with Deep Neural Nets." *In Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-18)*, New Orleans, Louisiana, February 2-7, 2018 ([pdf](#), [poster](#), [code](#)). [<25% Acceptance Rate]

**Lara J. Martin\***, Brent Harrison, & Mark O. Riedl. "Improvitational Computational Storytelling in Open Worlds." *In Proceedings of Ninth International Conference on Interactive Digital Storytelling (ICIDS 2016) / INT 9*, Los Angeles, California, November 15-18, 2016 ([pdf](#), [slides](#)). [36% Acceptance Rate]

**Lara J. Martin\***, Andrew Wilkinson\*, Sai Sumanth Miryala, Vivian Robison, & Alan W Black. "Utterance Classification in Speech-to-Speech Translation for Zero-Resource Languages in the Hospital Administration Domain." *In Proceedings of IEEE Automatic Speech Recognition and Understanding 2015 (ASRU 2015)*, Scottsdale, Arizona, December 13-17, 2015 ([pdf](#), [poster](#)). [47.8% Acceptance Rate]

**Lara Martin\***, Matthew Stone, Florian Metze, & Jack Mostow. "A Methodology for Using Crowdsourced Data to Measure Uncertainty in Natural Speech." *In Proceedings of IEEE Spoken Language Technologies 2014 (SLT 2014)*, South Lake Tahoe, Nevada, December 7-10, 2014 ([pdf](#), [poster](#)). [48.6% Acceptance Rate]

Shoou-I Yu\*, Lu Jiang, Zexi Mao, Xiaojun Chang, Xingzhong Du, Chuang Gan, Zhenzhong Lan, Zhongwen Xu, Xuanchong Li, Yang Cai, Anurag Kumar, Yajie Miao, **Lara Martin**, Nikolas Wolfe, Shicheng Xu, Huan Li, Ming Lin, Zhigang Ma, Yi Yang, Deyu Meng, Shiguang Shan, Pinar Duygulu Sahin, Susanne Burger, Florian Metze, Rita Singh, Bhiksha Raj, Teruko Mitamura, Richard Stern, & Alexander Hauptmann. "Informedia@ TRECVID 2014 MED and MER." *In Proceedings of TRECVID 2014*, University of Central Florida, Orlando, FL, November 10-12, 2014 ([pdf](#)).

## Refereed Workshop

\* Presented

Prithviraj Ammanabrolu\*, Ethan Tien, Wesley Cheung, Zhaochen Luo, William Ma, **Lara J. Martin**, & Mark O. Riedl. "Guided Neural Language Generation for Automated Storytelling." *In Proceedings of The Second Workshop of Storytelling at ACL 2019*, Florence, Italy, August 1, 2019 ([pdf](#)).

**Lara J. Martin\***, Srijan Sood, & Mark O. Riedl. "Dungeons and DQNs: Toward Reinforcement Learning Agents that Play Tabletop Roleplaying Games." *In Proceedings of AAAI Joint Workshop on Intelligent Narrative Technologies (INT) and Intelligent Cinematography and Editing (WICED)*, Edmonton, Alberta, November 13-14, 2018 ([pdf](#), [slides](#)).

**Lara J. Martin\***, Prithviraj Ammanabrolu, Xinyu Wang, Shruti Singh, Brent Harrison, Murtaza Dhuliawala, Pradyumna Tambwekar, Animesh Mehta, Richa Arora, Nathan Dass, Chris Purdy, & Mark O. Riedl. "Improvitational Storytelling Agents." *In Proceedings of the Workshop on Machine Learning for Creativity and Design (NeurIPS 2017)*, Long Beach, CA, December 8, 2017 ([pdf](#), [poster](#)).

**Lara J. Martin\***, Prithviraj Ammanabrolu, William Hancock, Shruti Singh, Brent Harrison, & Mark O. Riedl. "Event Representations for Automated Story Generation with Deep Neural Nets." *In Proceedings of Workshop on Machine Learning for Creativity (KDD 2017)*, Halifax, Nova Scotia, August 14-17, 2017 ([arXiv](#), [slides](#)). [~38% Acceptance Rate]

Seungwhan Moon\*, Saloni Potdar, & **Lara Martin**. "Identifying Student Leaders from MOOC Discussion Forums through Language Influence." *In Proceedings of Modeling Large Scale Social Interaction in Massively Open Online Courses Workshop (EMNLP 2014)*, Doha, Qatar, October 25, 2014 ([pdf](#)).

Sarah Cosentino\*, Susanne Burger, **Lara Martin**, Florian Metze, Tatsuhiro Kishi, Kenji Hashimoto, Salvatore Sessa, Massimiliano Zecca, & Atsuo Takanishi. "A multisensory non-invasive system for laughter analysis." *In Proceedings of 36th Annual International IEEE EMBS Conference*, Chicago, IL, August 26-30, 2014 ([pdf](#)).

Nikolas Wolfe\*, Vinay Vyas Vemuri, **Lara J. Martin\***, Florian Metze, & Alan W. Black. "Applause: A Learning Tool for Low-Resource Languages." *In Proceedings of Designing Speech and Language Interactions Workshop (CHI 2014)*, Toronto, Canada, April 26, 2014 ([pdf](#)).

## AWARDS

2020  
2019  
2019

[Computing Innovation Fellowship](#)  
[GVU Foley Scholar](#)  
Tapia Computing Conference Best Doctoral Consortium Presentation

## PROFESSIONAL ACTIVITIES

### INVITED SPEAKER

- + *Dungeons and Discourse: Using Computational Storytelling & Speech to Look at Natural Language Use.*  
University of Pennsylvania CLUNCH (Computational Linguistics Lunch) Group, January 25, 2021.
- + [Dungeons and Discourse: Using Computational Storytelling to Look at Natural Language Use.](#)  
Georgia Institute of Technology NLP seminar, September 11, 2020.
- + *Dungeons and Discourse: Using Computational Storytelling to Look at Natural Language Use.*  
Lawrence Livermore National Laboratory, Livermore, CA, June 11, 2020.
- + *Dungeons and Discourse: Using Computational Storytelling & Speech to Look at Natural Language Use.*  
University of Utah, Salt Lake City, UT, April 20, 2020.
- + IPaT Thursday Think Tank: Future of Language Research, Invited Panelist.  
Atlanta, GA, February 20, 2020.
- + [Using Storytelling to Understand the Technological and Experiential Requirements of Interactive Improvisational Agents.](#)  
GVU Brown Bag, Atlanta, GA, January 23, 2020.
- + *Using Storytelling to Understand the Technological and Experiential Requirements of Interactive Improvisational Agents.*  
Tapia Doctoral Consortium, San Diego, CA, September 18, 2019.  
**Winner of Best Doctoral Consortium Presentation Award.**
- + *A Model of Uncertainty in Language.* REU Site Meeting,  
University of Pennsylvania, Philadelphia, PA, July 18, 2013.

### ORGANIZER

- + [3rd Workshop on Narrative Understanding](#), at NAACL 2021, Online, June 11, 2021.
- + [Workshop on Narrative Understanding, Storylines, and Events \(NUSE\)](#), Co-Located with ACL 2020, Online, July 9, 2020.

### LOCAL ARRANGEMENTS CHAIR

- + Fifteenth AAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE), Georgia Institute of Technology, Atlanta, Georgia, October 8-12, 2019.

### PUBLICITY CO-CHAIR

- + Sixteenth AAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE), Online, October 19-23, 2020.

### ASSOCIATE PROGRAM CHAIR – TECHNOLOGIES TRACK

- + International Conference for Interactive Digital Storytelling (ICIDS), Trinity College, Dublin, Ireland, December 5-8, 2018.

#### **ARTIFACT EVALUATION COMMITTEE MEMBER**

- + Fourteenth AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE), University of Alberta, Canada, November 13-17, 2018.

#### **PROGRAM COMMITTEE MEMBER**

- + Twelfth Interactive Narrative Technologies (INT-20) Workshop at the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE), Online, October 19-20, 2020
- + Eleventh Procedural Content Generation (PCG-20) Workshop at the Foundations of Digital Games (FDG) Conference, Bugibba, Malta, September 2020.
- + International Conference for Interactive Digital Storytelling (ICIDS), Little Cottonwood Canyon, UT, November 19-23, 2019.
- + Tenth Procedural Content Generation (PCG-19) Workshop at the Foundations of Digital Games (FDG) Conference, San Luis Obispo, California, August 26, 2019.
- + Second Workshop on Storytelling at ACL, Florence, Italy, August 1, 2019.
- + First Workshop on Narrative Understanding at NAACL, Minneapolis, MN, June 7, 2019.
- + Second Knowledge Extraction from Games (KEG-19) Workshop at AAAI, Hilton Hawaiian Village, Honolulu, Hawaii, January 27, 2019.
- + First Workshop on Storytelling at NAACL-HLT, New Orleans, LA, June 5, 2018.

#### **JOURNAL REVIEWER**

- + ACM Computing Surveys (CSUR), 2020.
- + IEEE Transactions on Audio, Speech and Language Processing, 2020.

#### **CONFERENCE ATTENDEE**

- + ACM Richard Tapia Celebration of Diversity in Computing, San Diego, CA, September 18-21, 2019.
- + CRA-Women Graduate Cohort Workshop, San Diego, CA, April 15-16, 2016.
- + Anita Borg Institute's Grace Hopper Celebration, Minneapolis, MN, October 2-5, 2013.
- + CRA STARS Alliance Celebration, Atlanta, GA, August 16-17, 2013.

#### **INSTITUTIONAL SERVICE**

Summer 2019  
Spring '16, '17, '18  
Fall 2018  
Fall 2018-Spring 2019  
Fall 2017-Spring 2019

#### **GEORGIA INSTITUTE OF TECHNOLOGY**

Reviewer for *President's Undergraduate Research Awards (PURA)*  
*School of Interactive Computing's* Prospective Student Visit Week, Volunteer  
Faculty Hiring Committee Member  
Graduate Student Council Member  
Website Manager for the *Human-Centered Computing* program

Spring 2016

*School of Interactive Computing's* Prospective Student Visit Week, Coordinator

## MENTORSHIP

Spring 2021-Present

Spring 2021-Present

Fall 2020-Present

Spring 2020-Fall 2020

Spring 2020

Spring 2020

Fall 2019-Fall 2020

Fall 2019

Summer 2018-Sum. 2019

Spring 2019

Summer 2018-Spring 2019

Summer 2018-Fall 2018

Spring 2018

Spring 2017-Spring 2018

Spring 2017-Spring 2018

Spring 2017-Spring 2018

Spring 2017-Spring 2018

Spring 2017-Fall 2017

Spring 2017

Fall 2016

Fall 2016

Spring 2016-Fall 2016

Spring 2016-Fall 2016

## MEDIA COVERAGE

### UNIVERSITY OF PENNSYLVANIA

Bryan Li, PhD Computer and Information Science

Anna Orosz, MSE Data Science

Sanjeevini Ganni, MSE Data Science

### GEORGIA INSTITUTE OF TECHNOLOGY

Siyan "Sylvia" Li, BS Computer Science

Sruthi Sudhakar, BS Computer Science

Kimberly Caras, MS Computer Science

Winston Li, BS Computer Science

Andrew Silva, PhD Computer Science

Srijan Sood, MS Computer Science

+ Now Research Engineer at JP Morgan

Jainesh Doshi, MS Computer Science

+ Now Machine Learning Engineer at JP Morgan

Sonia Sargolzaei

Taha Merghani, MS Computer Science

Ethan Tien, BS Computer Science

+ Now CS MS student at Georgia Tech

Prithviraj Ammanabrolu, BS Computer Science

+ Now CS PhD student at Georgia Tech

Pradyumna Tambwekar, MS Computer Science

+ Now CS PhD student at Georgia Tech

Richa Arora, MS Computer Science

+ Now at Google Analytics

Richa Arora, MS Computer Science

+ Now at Google Analytics

Xinyu (Lily) Wang, MS Computer Science

+ Now MS Language Technologies student at Carnegie Mellon

Nathan Dass, BS Computer Science

+ Now MS student at Stanford University

Murtaza Dhuliawala, MS Computer Science

+ Now Research Software Engineer at IBM Research

Koustuv Saha, PhD Computer Science

Yuval Pinter, PhD Computer Science

Shruti Singh, MS Computer Science

Now Software Development Engineer at Amazon

Will Hancock, MS Computer Science

+ Now PhD student at Northwestern University

### [Alexa, tell me a story](#)

+ BBC Science Focus Magazine, Dark Stars. Amy Barrett, Feb 17, 2021.

[Meet ML@GT: Lara J. Martin Trains AI Agents to Become Storytellers](#)

- + *Georgia Tech Machine Learning, Memos from ML@GT.* Apr 16, 2020.

[Forget Chess—the Real Challenge Is Teaching AI to Play D&D](#)

- + *Wired.* Will Knight, Feb 28, 2020.

[Changing the Conversation: Georgia Tech Researchers Provide New Approach to Automated Story Generation](#)

- + *Georgia Tech School of Interactive Computing.*  
David Mitchell, Feb 4, 2020.

[Sztuczna inteligencja jako pisarz: Generowanie fabuły](#)

(Translation from Polish: Artificial Intelligence as a Writer: Story Generation)

- + *Zeszyty Maryny.* Patrycja Świeczkowska, Oct 4, 2019.

[Pictionary-Playing AI Sketches the Future of Human-Machine Collaborations](#)

(mention)

- + *IEEE Spectrum.* Eliza Strickland, Feb 6, 2019.

[Georgia Tech Artificial Intelligence Research Includes Collaborative Approaches with Humans, Automating Content, and More](#)

- + *Georgia Tech GVU Center.* Joshua Preston, Feb 2, 2018.

[Improvisational Computational Storytelling in Open Worlds](#)

- + *Medium.* Mark Riedl, Jul 24, 2017.