

# Natalie Parde

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## Education      **Ph.D., Computer Science and Engineering**

University of North Texas, 2018. 4.0/4.0.

## **M.S., Computer Science**

University of North Texas, 2016. 4.0/4.0.

## **B.S., Computer Science**

University of North Texas, 2013. *Summa Cum Laude*.

## Research      **Natural Language Processing Laboratory**

Department of Computer Science, University of Illinois at Chicago  
*Co-Director*, October 2018 – Present

## **Human Intelligence and Language Technologies Laboratory**

Department of Computer Science and Engineering, University of North Texas  
*Research Assistant*, June 2013 – May 2015  
*Research Fellow*, June 2015 – September 2018

## **Human Movement Performance Laboratory**

Department of Physical Therapy, University of North Texas Health Science Center  
*Programmer*, June 2018 – September 2018

## **Software and Knowledge Engineering Laboratory**

Institute of Informatics and Telecommunications, N.C.S.R. Demokritos, Greece  
*Visiting Researcher*, July 2014

## **Reconfigurable Computing Laboratory**

Department of Electrical Engineering, University of North Texas  
*Research Assistant*, June 2012 – May 2013

## Research Grants      **Google Cloud Platform Research Credits Grant**

Google, December 2018 | PI: 100% | Award Amount: \$5000

## **National Science Foundation Graduate Research Fellowship**

National Science Foundation, April 2014 | PI: 100% | Award Amount: \$132,000

## Awards

**Outstanding Reviewer**, North American Chapter of the Association for Computational Linguistics, 2019  
**Outstanding Ph.D. Student**, Department of Computer Science and Engineering, University of North Texas, 2018  
**Dr. Hermann Zemlicka Award for Most Visionary Paper**, Gmunden Retreat on NeuroIS, 2017  
**Golden Eagle Award**, University of North Texas, 2016  
**First Place Project**, International Research-centered Summer School in Cognitive Systems and Interactive Robotics, Data and Content Analysis, 2014  
**People's Choice Project**, International Research-centered Summer School in Cognitive Systems and Interactive Robotics, Data and Content Analysis, 2014  
**Honors Scholar Award**, UNT Honors College, 2013

## Travel Grants

**Connections in Smart Health Workshop Travel Award**, National Science Foundation, 2018  
**SemBEaR Student Travel Grant**, NAACL Workshop on Computational Semantics Beyond Events and Roles/National Science Foundation, 2018  
**AAAI Doctoral Consortium Travel Grant**, Association for the Advancement of Artificial Intelligence, 2018  
**Grace Hopper Scholarship**, Google, 2017  
**EMNLP Student Scholarship**, Special Interest Group on Linguistic Data and Corpus-based Approaches to NLP, 2017  
**Toulouse Graduate School Travel Grant**, University of North Texas, 2018, 2017  
**College of Engineering Travel Grant**, University of North Texas, 2018, 2017, 2014  
**Departmental Travel Award**, Department of Computer Science and Engineering, University of North Texas, 2018, 2016, 2015, 2013  
**IJCAI Doctoral Consortium Travel Grant**, International Joint Conference on Artificial Intelligence/National Science Foundation, 2015  
**CRA-W Workshop and Travel Scholarship**, CRA Committee on the Status of Women in Computing, 2016, 2015, 2014

## Scholarships

**Graduate Assistantship Tuition Scholarship**, University of North Texas, 2013  
**Academic Achievement Scholarship**, University of North Texas, 2013  
**Engineering Ambassador Scholarship**, College of Engineering, University of North Texas, 2012  
**C.J. Davidson Honors Scholarship**, Honors College, University of North Texas, 2011  
**Achievement Scholarship**, University of North Texas, 2009  
**Board of Regents' Excellence Scholarship**, University of North Texas, 2009-2013

- Publications<sup>1</sup> S. Farzana\*, M. Valizadeh\*, and N. Parde. Modeling Dialogue in Conversational Cognitive Health Screening Interviews. To appear in *Proceedings of the 12th International Conference on Language Resources and Evaluation (LREC 2020)*. Marseilles, France, May 11-16, 2020.
- F. Di Palo\* and N. Parde. Enriching Neural Models with Targeted Features for Dementia Detection. In *Proceedings of the 2019 ACL Student Research Workshop (ACL SRW 2019)*. Florence, Italy, July 28-August 2, 2019.
- N. Parde and R. D. Nielsen. AI Meets Austen: Towards Human-Robot Discussions of Literary Metaphor. In *Proceedings of the 20th International Conference on Artificial Intelligence in Education (AIED 2019)*. Chicago, Illinois, June 25-29, 2019.
- Y. Modi\* and N. Parde. The Steep Road to Happily Ever After: An Analysis of Current Visual Storytelling Models. In *Proceedings of the NAACL 2019 Workshop on Shortcomings in Vision and Language (SiVL 2019)*. Minneapolis, Minnesota, June 6, 2019.
- S. Farzana\* and N. Parde. Virtual-Interviewer: A Conversational Agent Designed to Facilitate Cognitive Health Screening in Older Adults. In *Proceedings of the IEEE-EMBS International Conference on Biomedical and Health Informatics: Extended Abstracts (BHI 2019)*. Chicago, Illinois, May 19-22, 2019.
- N. Parde and R. D. Nielsen. User Perceptions of a Conversational Robot Interface. In *Proceedings of the CHI 2019 Workshop on Mapping Theoretical and Methodological Perspectives for Understanding Speech Interface Interactions (SpeechCHI 2019)*. Glasgow, United Kingdom, May 5, 2019.
- N. Parde and R. D. Nielsen. Automatically Generating Questions about Novel Metaphors in Literature. In *Proceedings of the 11th International Conference on Natural Language Generation (INLG 2018)*. Tilburg, The Netherlands, November 5-8, 2018.
- N. Parde and R. D. Nielsen. Reading with Robots: Promoting Cognitive Exercise in Elderly Populations through Embodied Conversational Dialogue. In *Proceedings of the 2018 Connections in Smart Health Workshop*. Arlington, Virginia, September 24-26, 2018.
- N. Parde and R. D. Nielsen. Detecting Sarcasm is Extremely Easy ;-). In *Proceedings of the NAACL 2018 Workshop on Computational Semantics Beyond Events and Roles (SemBEaR 2018)*. New Orleans, Louisiana, June 5, 2018.

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<sup>1</sup>An asterisk (\*) indicates students who I advise.

N. Parde and R. D. Nielsen. A Corpus of Metaphor Novelty Scores for Syntactically-Related Word Pairs. In *Proceedings of the 11th International Conference on Language Resources and Evaluation (LREC 2018)*. Miyazaki, Japan, May 7-12, 2018.

N. Parde and R. D. Nielsen. Exploring the Terrain of Metaphor Novelty: A Regression-based Approach for Automatically Scoring Metaphors. In *Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-18)*. New Orleans, Louisiana, February 2-7, 2018.

N. Parde. Reading with Robots: Towards a Human-Robot Book Discussion System for Elderly Adults. In *Proceedings of the Thirty-Second AAAI Conference on Artificial Intelligence (AAAI-18) Doctoral Consortium*. New Orleans, Louisiana, February 2-7, 2018.

N. Parde and R. D. Nielsen. Finding Patterns in Noisy Crowds: Regression-based Annotation Aggregation for Crowdsourced Data. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing (EMNLP 2017)*. Copenhagen, Denmark, September 7-11, 2017.

N. Salma, B. Mai, K. Namuduri, R. Mamun, Y. Hashem, H. Takabi, N. Parde, and R. Nielsen. Using EEG Signal to Analyze IS Decision Making Cognitive Processes. In *Information Systems and Neuroscience, Lecture Notes in Information Systems and Organisation*.

M. Narouei, H. Khanpour, H. Takabi, R. Nielsen and N. Parde. Towards a Top-down Policy Engineering Framework for Attribute-based Access Control. In *Proceedings of the 22nd ACM Symposium on Access Control Models and Technologies*. Indianapolis, Indiana, June 21-23, 2017.

N. Parde and R. D. Nielsen. #SarcasmDetection is soooo general! Towards a Domain-Independent Approach for Detecting Sarcasm. In *Proceedings of the 30th International FLAIRS Conference (FLAIRS 2017)*. Marco Island, Florida, May 22-24, 2017.

N. Parde, A. Hair, M. Papakostas, K. Tsiakas, M. Dagioglou, V. Karkaletsis, and R. D. Nielsen. Grounding the Meaning of Words through Vision and Interactive Gameplay. In *Proceedings of the 2015 International Joint Conference on Artificial Intelligence (IJCAI 2015)*, Buenos Aires, Argentina, July 25-31, 2015.

M. Papakostas, K. Tsiakas, N. Parde, V. Karkaletsis, and F. Makedon. An Interactive Framework for Learning User-Object Associations through Human-Robot Interaction. In *Proceedings of the 8th International Conference on Pervasive Technologies Related to Assistive Environments (PETRA 2015)*, Corfu, Greece, July 1-3, 2015.

N. Parde, M. Papakostas, K. Tsiakas, and R. D. Nielsen. “Is It Rectangular?” Using I Spy as an Interactive, Game-Based Approach to Multimodal Robot Learning. In *Proceedings of the AAAI-15 Conference on Artificial Intelligence Student Program*, Austin, Texas, January 25-30, 2015.

N. Parde, M. Papakostas, K. Tsiakas, M. Dagioglou, V. Karkaletsis, and R. D. Nielsen. I Spy: An Interactive Game-Based Approach to Multimodal Robot Learning. In *Proceedings of the AAAI-15 Workshop on Knowledge, Skill, and Behavior Transfer in Autonomous Robots*, Austin, Texas, January 25, 2015.

N. Parde and R. D. Nielsen. Design Challenges and Recommendations for Multi-Agent Learning Systems Featuring Teachable Agents. In *Proceedings of the 2nd Annual GIFT Users Symposium (GIFTSym2)*. Pittsburgh, Pennsylvania, June 12-13, 2014

G. Mehta, K. K. Patel, N. Parde, and N.S. Pollard. “Data-driven mapping using local patterns.” *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems* 32.11 (2013): 1668-1681.

G. Mehta, C. Crawford, X. Luo, N. Parde, K. Patel, B. Rodgers, A. Sistla, A. Yadav, and M. Reisner. (2013). UNTANGLED – A game environment for discovery of creative mapping strategies. In *ACM Transactions on Reconfigurable Technology and Systems*, Vol. 6, No.3

G. Mehta, X. Luo, N. Parde, K. Patel, B. Rodgers, and A. K. Sistla. UNTANGLED - An interactive mapping game for engineering education. In *Proceedings of 2013 IEEE International Conference on Microelectronic Systems Education (MSE 2013)*, Austin, Texas, 2013.

A. Sistla, N. Parde, K. Patel, and G. Mehta. Cross-architectural study of custom reconfigurable devices using crowdsourcing. In *Proceedings of the 2013 IEEE 27th International Symposium on Parallel and Distributed Processing Workshops and PhD Forum (IPDPSW 2013)*, Boston, Massachusetts, May 20-24, 2013.

## Invited Talks

N. Parde. An Introduction to the Deliciously Simple (#sarcasm) World of Computational Figurative Language Processing. Invited presentation at the *UIC Cognitive Psychology Brown Bag Series*. Chicago, Illinois, April 3, 2019.

N. Parde. Writing a Successful Proposal — How I Did It. Invited presentation at the *2018 UNT Graduate Research Grant Assistance Workshop*. Denton, Texas, August 22-24, 2018.

## Additional Talks

Y. Modi and N. Parde. Visual Storytelling: Errors and Improvements. Presentation at the *2019 Midwest Speech and Language Days (MSLD 2019)*. Chicago, Illinois, May 3, 2019.

N. Parde and R. D. Nielsen. Reading with Robots: Towards an Intelligent Reading Companion that Promotes Cognitive Exercise in Older Adults. Poster at the *2017 Dallas Aging and Cognition Conference*. Dallas, Texas, January 29-30, 2017.

R. D. Nielsen and N. Parde. Perceptive Emotive Spoken-Dialogue Companion Robots. Presentation at the *2016 IEEE MetroCon Conference*. Arlington, Texas, October 26, 2016.

N. Parde and R. D. Nielsen. Getting to the Heart of Metaphors: Dependency-based Detection of Metaphoric Juxtapositions. Poster at the *2016 CRA-Women Graduate Cohort Workshop*. San Diego, California, April 15-16, 2016.

N. Parde and R. D. Nielsen. An Exploration in Teaching Robots through “I Spy” Gameplay. Poster at the *2015 CRA-Women Graduate Cohort Workshop*. San Francisco, California, April 10-11, 2015.

N. Parde and R. D. Nielsen. Improving Cognition in the Elderly via Dialogue-Based Games with Teachable Robot Agents. Poster at the *2014 CRA-Women Graduate Cohort Workshop*. Santa Clara, California, April 11-12, 2014.

## Teaching

### **UIC CS 421: Natural Language Processing**, Fall 2019

Course Evaluations:<sup>2</sup>

Class Size: 28/25 (Undergrad/Grad) | Course Evaluation Responses: 16/22

*Teaching Effectiveness*:  $4.5/4.36 \pm 0.82/0.85$  | *Overall Qual.*:  $4.44/4.64 \pm 0.73/0.58$

*Difficulty*:  $3.69/3.05 \pm 0.7/1.05$  | *Workload*:  $3.63/3.41 \pm 0.62/1.01$

### **UIC CS 594: Language and Vision**, Spring 2019

Course Evaluations:

Class Size: 19 | Course Evaluation Responses: 17

*Teaching Effectiveness*:  $4.82 \pm 0.39$  | *Overall Quality*:  $4.71 \pm 0.47$

*Difficulty*:  $3.41 \pm 0.51$  | *Workload*:  $3.53 \pm 0.51$

Additional Course Impact:

- CS 521 (Spring 2020) mentioned in the January 2020 issue of the NLP Newsletter<sup>3</sup> (11.8k+ subscribers)

- CS 594 (Spring 2019) listed as a reference for CMP 722 (Advanced Computer Vision) at Hacettepe University<sup>4</sup>

## Guest

### **UNT (Frisco) CSCE 5300: Introduction to Big Data and Data Science**

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<sup>2</sup>Scored using a Likert scale ranging from 1-5. For *Teaching Effectiveness* and *Overall Quality*, 1=Poor and 5=Excellent. For *Difficulty* and *Workload*, 1=Very Easy and 5=Very Hard.

<sup>3</sup><http://newsletter.ruder.io/issues/nlp-progress-restrospectives-and-look-ahead-new-nlp-courses-independent-research-initiatives-interviews-lots-of-resources-217744>

<sup>4</sup><https://web.cs.hacettepe.edu.tr/~aykut/classes/spring2019/cmp722/>

## Lectures

March 2018: Big Data and Data Science Overview

### **UNT CSCE 4310/5210: Introduction to Artificial Intelligence**

May 2018: Grounded Language Learning

February 2018: Figurative Language Processing + AAAI 2018 Highlights

March 2017: Natural Language Processing

### **UNT CSCE 1010: Discovering Computer Science**

Nov. 2015, April 2015, Nov. 2014, April 2014: Introduction to Robotics with NAO

## External Service

**Session Chair**, Midwest Speech and Language Days, 2019

### **Funding Agency Panelist**

National Science Foundation, 2020

National Science Foundation, 2019

### **Program Committees**

#### **Major Conferences:**

(ACL 2020) Annual Meeting of the Association for Computational Linguistics,  
Track: NLP Applications

(EMNLP 2019) Conference on Empirical Methods in Natural Language Processing,  
Tracks: Sentence-Level Semantics; Speech, Vision, Robotics, Multimodal and  
Grounding

(ACL 2019) Annual Meeting of the Association for Computational Linguistics,  
Tracks: Word-Level Semantics; Dialogue and Interactive Systems; Vision,  
Robotics, Multimodal Grounding, and Speech

(NAACL 2019) Conference of the North American Chapter of the Association for  
Computational Linguistics, Track: Semantics

#### **Targeted Conferences:**

(LREC 2020) Language Resources and Evaluation Conference

(CoRL 2019) Conference on Robot Learning

(AAMAS 2019) International Conference on Autonomous Agents and Multiagent  
Systems

(LDK 2019) Conference on Language, Data and Knowledge

#### **Workshops:**

(SpLU-RoboSRL 2019) NAACL-HLT Combined Workshop on Spatial Language  
Understanding & Grounded Communication for Robotics

### **External Reviewer**

(CHI 2019) ACM CHI Conference on Human Factors in Computing Systems

### **Ad-Hoc Journal Reviewer**

Neurocomputing, 2019

Internal  
Service

**Conference Volunteer**

(EMNLP 2017) Empirical Methods in Natural Language Processing  
(IJCAI 2015) International Joint Conference on Artificial Intelligence

**University of Illinois at Chicago**

**Ph.D. Advisor:**

Current:

Ankit Aich, *University of Illinois at Chicago*  
Mina Valizadeh, *University of Illinois at Chicago*  
Mohammad Arvan, *University of Illinois at Chicago*  
Pardis Ranjbar-Noiey, *University of Illinois at Chicago*  
Shahla Farzana, *University of Illinois at Chicago*  
Usman Shahid, *University of Illinois at Chicago*

**M.S. Thesis Advisor:**

Current:

Yatri Modi, *University of Illinois at Chicago*

Alumni:

Alberto Bellini (Successfully Defended 12/13/2019), *University of Illinois at Chicago*  
Flavio Di Palo (Successfully Defended 12/12/2019), *University of Illinois at Chicago*

**Ph.D. Committees:**

Current:

Felix Pambuccian (Preliminary Exam: Forthcoming), *Psychology, University of Illinois at Chicago*  
Itika Gupta (Preliminary Exam: Fall 2019), *Computer Science, University of Illinois at Chicago*  
Abhinav Kumar (Preliminary Exam: Fall 2019), *Computer Science, University of Illinois at Chicago*  
Krista Miller (Preliminary Exam: Fall 2019), *Psychology, University of Illinois at Chicago*  
Mehrdad Alizadeh (Preliminary Exam: Spring 2019), *Computer Science, University of Illinois at Chicago*  
Zainab Al-Qurashi (Preliminary Exam: Spring 2019), *Computer Science, University of Illinois at Chicago*

Alumni:

Lei Shu (Successfully Defended 2/10/2020), *Computer Science, University of Illinois at Chicago*  
Hu Xu (Successfully Defended 2/10/2020; Preliminary Exam: Fall 2019), *Computer Science, University of Illinois at Chicago*

**M.S. Thesis Committees:**



Alumni:

Tejas Sarma (Successfully Defended 3/15/2019), *University of Illinois at Chicago*  
Shoaib Khan (Successfully Defended 3/12/2019), *University of Illinois at Chicago*  
Paolo Polimeno Camastra (Successfully Defended 12/11/2018), *University of Illinois at Chicago* and *Politecnico di Milano*

**M.S. Project Committees:**

Alumni:

Aldo Alvarez (Spring 2019), *University of Illinois at Chicago*  
Ashwani Khemani (Spring 2019), *University of Illinois at Chicago*  
Unaiza Faiz (Spring 2019), *University of Illinois at Chicago*

**WCP Chair:**<sup>5</sup>

Current:

Seo Yeon Park, *University of Illinois at Chicago*  
Mahshid Alsadat Hosseini, *University of Illinois at Chicago*

Previous:

Hasti Sharifi (Fall 2019), *University of Illinois at Chicago*  
Yingjie Li (Spring 2019), *University of Illinois at Chicago*

**WCP Committees:**

Current:

Mina Valizadeh, *University of Illinois at Chicago*  
Mohammad Arvan, *University of Illinois at Chicago*

Previous:

Neshat Mohammadi (Spring 2019), *University of Illinois at Chicago*

**Additional Mentoring:**

Mariya Pasheva (2020–Present), *University of Illinois at Chicago*  
Ivana Pavlovic (2019–Present), Early Research Scholars Program, *University of Illinois at Chicago*  
Jessica Borowy (2019–Present), Early Research Scholars Program, *University of Illinois at Chicago*  
Noemi Andras (2019–Present), Early Research Scholars Program, *University of Illinois at Chicago*  
Soyoon Lee (2019–Present), Early Research Scholars Program, *University of Illinois at Chicago*  
Cade Gordon (2019–Present), *Adlai E. Stevenson High School*  
Salma Kamni (2019–Present), *Amos Alonzo Stagg High School*  
Yousef Ahmed (2019), *University of Illinois at Urbana-Champaign*

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<sup>5</sup>Written Critique and Presentation (WCP) is the formal name for UIC's Ph.D. qualifier examination. Advisors cannot serve as chairs for their own advisees, and at least one committee member must be from outside the student's primary research area.

**Interviewer**, College of Engineering Women's Scholarship Program, Spring 2020  
**Mentor**, exploreCSR Problem Solving and Research Workshop, Spring 2020  
**Panelist**, exploreCSR Problem Solving and Research Workshop, Fall 2019  
**Faculty Chaperone**, Grace Hopper Celebration of Women in Computing, Fall 2019  
**Computer Science Marshal**, UIC Commencement Ceremony, Spring 2019  
**Interviewer**, College of Engineering Women's Scholarship Program, Spring 2019  
**Proposal Reviewer**, Discovery Partners Institute (DPI) Seed Funding Cycle 1 Program, Winter 2018/19

### **University of North Texas**

#### **Mentoring:**

Ajata Reddy (2018–Present), *Texas Academy of Mathematics and Science (TAMS)*  
Henry Nguyen (2018-2019), *TAMS*  
John Long (2018), *TAMS*  
Skylar Werner (2018), *University of North Texas (UNT)*  
Philip Zeng (2018), *TAMS*  
Ryan Peterson (2017-2018), *TAMS*  
Huram-Abi Yotchoum Nzia (2017-2018), *TAMS*  
Shelby Hobohm (2016-2017), *TAMS*  
Leanne Joseph (2016-2017), *TAMS*  
Soujanya Geddam (2016-2017), *TAMS*  
Yuri Castro (2016), *TAMS*  
Zaine Khoja (2016), *TAMS*  
Jacob Brunson (2015-2016), *TAMS*  
Sara Adams (2015-2016), *TAMS*  
Noelle Davis (2015-2016), *TAMS*  
Zhaochen Gu (2015-2016), *UNT*  
Adam Hair (2014-2015), *UNT*  
Keerat Baweja (2013-2015), *TAMS*

**Judge**, UNT Showcase of Undergraduate Research in Engineering, Fall 2013  
**Engineering Ambassador**, UNT College of Engineering, 2012-2013

### **Outreach**

**Team Leader**, UIC Women in CS Scavenger Hunt, Fall 2019  
**Activity Leader**, STEM Academy Middle School Summer Camp, July 2018, July 2017, July 2016  
**Site Facilitator**, North American Computational Linguistics Olympiad, 2018, 2017, 2016, 2014  
**Application Reviewer**, NCWIT Aspirations in Computing Award, 2017, 2015  
**Activity Instructor**, Design Your World STEM Conference for Girls, November 2017, April 2016, March 2015  
**Student Group Leader**, Design Your World STEM Conference for Girls, April 2017

**Panelist**, NCWIT Aspirations in Computing Ceremony, February 2016  
**Activity Leader**, UNT Engineering REAL Community, October 2015  
**Presenter**, NCWIT Aspirations in Computing Ceremony, February 2015

Affiliations    **Member**, Association for Computing Machinery  
                  **Member**, Association for Computational Linguistics  
                  **Member**, Association for the Advancement of Artificial Intelligence  
                  **Former President**, UNT Women in Computing