

ELISA FERRACANE

1104 Rebecca Dr, Austin, TX 78758
elisa@ferracane.com
elisa.ferracane.com
(512) 769-5413

RESEARCH INTERESTS

I am a PhD candidate in the field of Computational Linguistics, specializing in computational discourse. My dissertation examines subjective discourse, where the same text can yield different interpretations, depending on the reader's biases. I focus on creating models that can account for and predict the presence of multiple, valid labels to describe a discourse relation.

EDUCATION

- PhD in Linguistics, specialization in Computational Linguistics** 2020 (expected)
The University of Texas at Austin, Texas. GPA: 3.95.
Advisors: Dr. Katrin Erk, Dr. Junyi Jessy Li
- Master's in Linguistics** May 2018
Thesis: Testing the usefulness of RST and more general representations for discourse analysis across domains and applications
Advisors: Dr. Katrin Erk, Dr. Junyi Jessy Li
The University of Texas at Austin, Texas. GPA: 3.95.
- Bachelor of Science in Computer Engineering** 2001
University of Puerto Rico, Mayagüez, Puerto Rico. GPA: 3.80.
- Study abroad** Summer 1998
Università per Stranieri, Perugia, Italy. GPA: 4.00.

RESEARCH EXPERIENCE

- Research Intern** Summer 2019
Google; San Francisco, California; Hosts: Praveen Paritosh, Jason Baldridge
Designed a scalable data scraping and annotation process to construct debates in the "wild" out of Reddit threads. Created a small dataset to validate the process and understand the nature of the data.
- Deep Learning Research Intern** Summer 2018
Salesforce Research; Palo Alto, California
Explored the discourse structure induced using different forms of attention, different objective functions, and adding a small amount of supervision.
- Analysis of induced discourse structures across NLP tasks** 2017-2018
Supervisors: Katrin Erk, Junyi Jessy Li, Greg Durrett; The University of Texas at Austin
Used neural network with attention to induce discourse dependency trees on a combination of end tasks evaluated on the same dataset.
Analyzed dependency trees for usefulness on end task, and comparison between tasks.
- Analysis of spelling mistakes for Parkinson's** 2014-present
Supervisor: Colin Bannard; University of Liverpool
Analyzing spelling mistakes from healthy and Parkinson's patients with goal of detecting early onset of Parkinson's disease.
Led annotation project to create corpus of categorized spelling mistakes from Wikipedia, directing three undergraduate students.
- Discourse analysis of medical documents** 2015-2016
Supervisors: Byron Wallace, Katrin Erk; The University of Texas at Austin
Combined information extraction techniques with coreference chains to identify key pieces of information in medical abstracts.
- Foreign accent adaptation in noise** 2013-2016
Supervisor: Rajka Smiljanic; The University of Texas at Austin
Carried out experimental phonetics study to analyze listener adaptation to foreign-accented speech in different forms of noise.
Trained and led several undergraduate researchers on lab protocols and analysis techniques.

RELEVANT GRADUATE COURSEWORK

Department of Linguistics: Research in Computational Linguistics

Department of Computer Science: Deep Learning Seminar; Structured Models for NLP; Natural Language Processing

Department of Statistics and Data Science: Introduction to Statistical Learning; Statistical Modeling

AWARDS AND FELLOWSHIPS

National Science Foundation Graduate Research Fellowship (NSF GRFP)	2017-2020
Graduate School Mentoring Fellowship; The University of Texas at Austin	2015-2016
Values Award - Trust and personal responsibility in all relationships; IBM	2015
Bravo Award - Exceptional performance on WebSphere Application Server v6.1; IBM	2005
Bravo Award - Product Validation contributions for WebSphere z/OS V5.0, 5.0.1, 5.0.2; IBM	2004

SKILLS

Languages	English, Spanish, Italian (fluent); French, Japanese, Chinese (limited)
Programming Languages	Python, Java, R; knowledge of Jython, shell script, SQL, javascript, HTML, C/C++
Operating Systems	UNIX, Linux, macOS, z/OS, Windows
Software	TensorFlow, PyTorch, DyNet, scikit-learn, numpy, NLTK, pandas, Jupyter Notebook, R Studio, E-Prime, Eclipse, Rational Tools, IBM WebSphere Application Server, HTTPUnit, Junit
Communication	Excellent written and oral communication skills across large organizations, different cultures and languages
Leadership	Extensive experience leading and organizing small teams in successful product deliveries

WORK EXPERIENCE

Security Software Developer for WebSphere Application Server	2006-2015
<i>IBM; Austin, Texas</i> Technical lead. Customer advocate for global financial firm. Technical mentor for 2 IBM new hires and 2 new team members.	
Member of Corporate Services Corp in Kenya	June 2012
<i>IBM; Nairobi, Kenya</i> Nominated for on-location philanthropic assignment. Collaborated with NGO and intergovernmental body to design a communications network for an energy-trading platform spanning ten Eastern Africa countries.	
Communications Lead for IBM Software Group Midwest US Cluster	2009-2013
<i>IBM; Austin, Texas</i> Helped organize and carry out monthly technical education events for IBM sites across the Midwest US.	
Level 3 Customer Support Specialist for WebSphere	Sep-Dec 2010
<i>IBM; Austin, Texas</i> Provided technical support for WebSphere customers.	
Graphical User Interface Developer for WebSphere	2005-2006
<i>IBM; Austin, Texas</i> Developed parts of the WebSphere GUI administrative console.	
System Tester for WebSphere on z/OS	2002-2005
<i>IBM; Poughkeepsie, New York</i> Led in defining and standardizing test processes; educated other teams on the product. Technical mentor for two summer interns.	

PEER-REVIEWED PUBLICATIONS

- [1] Elisa Ferracane, Greg Durrett, Junyi Jessy Li, and Katrin Erk. Evaluating Discourse in Structured Text Representations. *Association for Computational Linguistics*, page in press. 2019. <https://www.aclweb.org/anthology/P19-1062/>.
- [2] Elisa Ferracane, Titan Page, Junyi Jessy Li, and Katrin Erk. From news to medical: Cross-domain discourse segmentation. *Proceedings of the Workshop on Discourse Relation Parsing and Treebanking 2019 at NAACL*, pages 22–29. 2019. <https://www.aclweb.org/anthology/W19-2704>.
- [3] Colin Bannard, Mariana Leriche, Oliver Bandmann, Christopher H. Brown, Elisa Ferracane, Álvaro Sánchez-Ferro, José Obeso, Peter Redgrave, and Tom Stafford. Reduced habit-driven errors in Parkinson’s Disease. *Scientific Reports*, 9. 2019. <https://doi.org/10.1038/s41598-019-39294-z>.
- [4] Elisa Ferracane, Su Wang, and Raymond J. Mooney. Leveraging discourse information effectively for authorship attribution. *International Joint Conference for Natural Language Processing*, pages 584–593. 2017. <http://www.aclweb.org/anthology/I/I17/I17-1059.pdf>.
- [5] Elisa Ferracane, Iain Marshall, Byron C. Wallace, and Katrin Erk. Leveraging coreference to identify arms in medical abstracts: An experimental study. *Proceedings of the Seventh International Workshop on Health Text Mining and Information Analysis at EMNLP*, pages 86–95. 2016. <http://www.aclweb.org/anthology/W16-6112>.

BOOK CHAPTERS

- [1] Fabio Albertoni, Henry Cui, Elisa Ferracane, James Kochuba, Ut Le, Bill O’Donnell, Gustavo Cezar de Medeiros Paiva, Vipin Rathor, Grzegorz Smolko, Rengan Sundararaman, and Tam Tran. *Implementing Kerberos in a WebSphere Application Server Environment*. IBM Redbooks. 2009.
- [2] Carla Sadtler, Fabio Albertoni, Leonard Blunt, Shu Guang Chen, Elisa Ferracane, Grzegorz Smolko, Joerg-Ulrich Vesper, and Sean Zhu. *WebSphere Application Server V7.0 Security Guide*. IBM Redbooks. 2009.

CONFERENCE PRESENTATIONS

- [1] Elisa Ferracane. Leveraging discourse information effectively for authorship attribution. In *IJCNLP 2017*, 11/29/2017. 2017.
- [2] Elisa Ferracane. Leveraging coreference to identify arms in medical abstracts: An experimental study. In *Workshop on LOUHI at EMNLP 2016*, 11/16/2016. 2016.
- [3] Elisa Ferracane. The effect of informational and energetic masking on foreign-accent adaptation. In *Journal of the Acoustical Society of America, Jacksonville, Florida*, volume 1947, page 138. 2015. 10/26/2015.
- [4] Elisa Ferracane and Cynthia P. Blanco. Effect of noise on foreign-accent adaptation. In *Journal of the Acoustical Society of America, Pittsburgh, Pennsylvania*, volume 2435, page 137. 2015. 5/27/2015.
- [5] Cynthia P. Blanco and Elisa Ferracane. Language proficiency, context influence foreign-accent adaptation. In *Journal of the Acoustical Society of America, Indianapolis, Indiana*, volume 2109, page 136. 2014. 10/23/2014.

OTHER PRESENTATIONS

- [1] Elisa Ferracane. Intro to NLP, b-o-w and language modeling. In *Women In Data Science Meetup, Austin, Texas*, 7/24/2017. 2017.
- [2] Elisa Ferracane. Intro to NLP and computational linguistics. In *UT Undergraduate Linguistics Society, Austin, Texas*, 3/3/2016. 2016.
- [3] Elisa Ferracane, Julia Galstad, and Jessica Freasier. Data science from scratch workshop: Naïve Bayes. In *Women In Data Science Meetup, Austin, Texas*, 7/28/2016. 2016.
- [4] Elisa Ferracane. Security in WebSphere Application Server 8.5: Liberty Profile and other updates. In *IBM System Z Security Conference, Montpellier, France*, 10/14/2012. 2012.
- [5] Montgomery Bauman, Elisa Ferracane, and David Follis. Multiple presentations. In *WebSphere Application Server Week, Ohio*, 4/3/2010-4/8/2010. 2010.
- [6] Elisa Ferracane. IBM WebSphere Application Server v7 for z/OS: What’s new for security. In *Virtual WebSphere z/OS User Group meeting, online*, 4/12/2010. 2010.
- [7] Elisa Ferracane. What’s new in WebSphere Application Server v7 security. In *IBM System Z Security Conference, Montpellier, France*, 10/13/2010. 2010.

SERVICE

Conference reviewing

Area reviewer for Discourse & Pragmatics at EMNLP-IJCAI 2019
Secondary reviewer for ACL 2018, NAACL 2018, AAAI 2019

TEACHING ACTIVITIES & ADVISING

Mentor for international graduate student

The University of Texas at Austin

Helping international graduate student with fluency in English.

Tian Zhao

Jan-May 2019

Mentor for Linguistics undergraduate

The University of Texas at Austin

Mentoring undergraduate in RST-style discourse parsing in the medical domain.

Titan Page

Aug-Dec 2017

Mentor in the Pre-graduate School Internship Program

The University of Texas at Austin

Mentor students in researching honor's thesis and applying to graduate school.

Alessandra Urbina

Madhav Narayan

María Gavino

Aug-Dec 2018

Aug-Dec 2017

Jan-May 2016

Class assistant for Summer Statistics Institute, Dept. of Statistics & Data Sciences

The University of Texas at Austin

Facilitated learning in 4-day workshop.

Large Scale Data Analysis with Hadoop and Spark

Big Data Analytics: Theory and Methods

May 2017

May 2016

PATENTS ISSUED

- [1] Paul W Bennett, Elisa Ferracane, Daniel E Morris, and Michael C Thompson. Flexibly assigning security configurations to applications, August 27 2013. US Patent 8,522,307.
- [2] Paul W Bennett, Elisa Ferracane, William J O'donnell, and Michael C Thompson. Security role testing using an embeddable container and properties object, February 28 2017. US Patent 9,582,407.
- [3] Paul W Bennett, Elisa A Ferracane, Daniel E Morris, and Michael C Thompson. Dynamic switching of security configurations, March 22 2016. US Patent 9,292,702.
- [4] Elisa Ferracane, Paul William Bennett, William J O'donnell, Ajay Reddy Karkala, Ut Van Le, Michael Craig Thompson, and Maxim Avery Moldenhauer. System and method for merging security constraints when using security annotations, February 4 2014. US Patent 8,645,679.
- [5] William J O'donnell, Paul William Bennett, Elisa Ferracane, Ajay Reddy Karkala, Ut Van Le, and Michael Craig Thompson. System and method to control display of a realm name, January 20 2015. US Patent 8,938,791.
- [6] William J O'donnell, Paul William Bennett, Elisa Ferracane, Michael Craig Thompson, and Michael Dettlaff Christopher. Refreshing group membership information for a user identifier associated with a security context, April 22 2014. US Patent 8,707,405.
- [7] William J O'donnell, Elisa Ferracane, Paul W Bennett, and Michael C Thompson. System and method for maintaining dual identity in a server process, February 10 2015. US Patent 8,955,052.

VOLUNTEERING

Volunteer at Drive-A-Senior Organization

2014-present

Austin, TX

Provide transportation and companionship for senior citizens.

Teacher Assistant for Hour of Code

Dec 2015

Pérez Elementary School; Austin, TX

Introduced primary school children to coding concepts.

Tutor at the Settlement Home for Children

2009-2013

Austin, TX

Tutored abused girls in multiple high school subjects.

Volunteer at Red Cross

2008, 1998

Austin, TX and Mayagüez, PR

Helped people at shelters displaced by hurricanes.

Volunteer at Engineer Week IBM

2012, 2010

Austin, TX

Led educational workshops encouraging middle-school girls to pursue STEM careers.

Tutor at Literacy Connections of Dutchess County

2003-2005

Literacy Volunteers of America; Poughkeepsie, NY

Taught adult student to read and write.