Gabriella Chronis

Computational Linguistics PhD Candidate at the University of Texas at Austin, NSF Graduate Research Fellow focused on lexical semantics and social science.

Contact Information

phone: +1 (513) 460-5073
email: gabriella.chronis@utexas.edu
web: github.com/gchronis
Are.na: https://www.are.na/gabriella-chronis

Research Interests

Computational linguistics, lexical semantics, social meaning, metaphor & non-compositional meaning, computational social science, semiotics

Education

The University of Texas at Austin, Austin, TX, USA 2019-
Ph.D., Linguistics

- Advisors: Katrin Erk, David Beaver
- Committee: Katrin Erk, David Beaver, Kyle Mahowald, Courtney Handman
- Concentration: Computational Linguistics
- GPA: 4.0/4.0
- Thesis: *Ways of Speaking of Speaking Machines*
- Degree expected June 2025

Reed College, Portland, OR, USA 2011-2015
B.A., Linguistics

- Advisor: Matthew Pearson
- Allied Field: Mathematics
- Thesis: *Structural Aspects of Figurative and Literal Word Senses in a Vector Space Model of Semantics*
- GPA: 3.42/4.0 (see https://www.reed.edu/registrar/pdfs/grades-at-reed.pdf)

Academic Positions

The University of Texas at Austin

Assistant Instructor, LIN 313: Language and Computers 2021

- Instructor of record
- Redesigned syllabus to blend practical quantitative skills with linguistics and critical technology studies

Research Assistant 2020-2021 (three semesters)

- Supervisor: Katrin Erk
- Investigated the potential and implications of contextual language models for theories of word meaning.
- Led to multiple publications about the kinds of meaning captured by contextual word embeddings.

Fellowships Grants and Awards

Austin Independent School District Mentor of the Year	2023
Departmental Fall and Spring Fellowship, UT Austin	2023-2024
National Science Foundation Graduate Research Fellowship, NSF GRFP *(three years of funding)*	2021
Faculty Innovation Center Teaching Microgrant	2021
Professional Development Award, UT Austin	2020
Graduate School Fall and Spring Fellowship, UT Austin	2019-2020
Fall Provost Fellowship, UT Austin	2019
Spring Provost Fellowship, UT Austin	2020-2024
Reed College Commendation for Excellence in Scholarship	2015
National Merit Scholarship	2011

Articles and Archived Conference Proceedings

G. Chronis, K. Mahowald, and K. Erk. 2023. A Method for Studying Semantic Construal in Grammatical Constructions with Interpretable Contextual Embedding Spaces. In Proceedings of the 61st Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers), pages 242–261, Toronto, Canada. Association for Computational Linguistics.

V. Kovatchev, T. Chatterjee, V.S. Govindarajan, J. Chen, E. Choi, **G. Chronis**, A. Das, K. Erk, M. Lease, J. Jessy Li, Y. Wu, and K. Mahowald. 2022. Longhorns at DADC 2022: How many linguists does it take to fool a Question Answering model? A systematic approach to adversarial attacks. In Proceedings of the First Workshop on Dynamic Adversarial Data Collection, pages 41–52, Seattle, WA. Association for Computational Linguistics.

G. Chronis and K. Erk. 2020. When is a bishop not like a rook? When it's like a rabbi! Multi-prototype BERT embeddings for estimating semantic relationships. In Proceedings of the 24th Conference on Computational Natural Language Learning, 227–244. https://doi.org/10.18653/v1/2020.conll-1.17

Book Chapters

K. Erk and G. Chronis. 2022. Word embeddings are word story embeddings (and that's fine). In S. Lappin & J.-P. Bernardy (Eds.), *Algebraic Structures in Natural Language*. CRC Press.

Journal Articles in Progress

G. Chronis. (under review). NLP as Language Ideology: Discursive and Algorithmic Constructions of 'Toxic' Language. (solicited article for special issue of *AI & Society*)

Conference Presentations

G. Chronis. 2021. NLP as Language Ideology: Automated Toxicity Detection and the Metapragmatic Regimentation of Subjectivities in the Public Sphere. Conference: AI as Human Interactional Culture: Language, Data Practice, and Social Struggle. European University Viadrina, Frankfurt (Oder), Germany. March 31, 2023.

Invited Presentations

"Metapragmatic Regimentation in Toxic Language Detection." Language Machines Network, November 18, 2024.

"Evaluating vector-based models of lexical meaning shift with anchors in BERT space: the case of metaphor." Cardiff University NLP Group, February 4, 2021.

Chronis, G., Cohen, M. "for day ← 365, do: ruby | elixir." August 17, 2016. Talk presented at *Elixir.LDN*, London, England.

"Get good at Google: Translating critical thinking skills into a career in tech." October 27, 2016. Reed College Alumni Outcomes Panel, Portland, OR.

Other Teaching Experience

The University of Texas at Austin

- Guest Lecturer
  - "Backpropagation, Transformers, RLHF: An introduction to computational linguistics through the innovations in machine learning that paved the way for LLMs." LIN 306, Fall 2024. Instructor Taylor Joyce.
  - "How I learned to stop worrying and love large language models (for linguistics)," LIN 306 Introduction to Linguistics, Spring 2024. Instructor Elijah Wilder.
  - "Doctor Chatbot or: How I learned to stop worrying and love large language models (for linguistics)," LIN 306 Introduction to Linguistics, Spring 2023. Instructor Taylor Joyce.
  - "What is Computational Linguistics?," UT LIN 306 Introduction to Linguistics, Spring 2022. Instructor Austin German.
  - "What is Computational Linguistics?" UT LIN 306 Introduction to Linguistics, Spring 2022. Instructor Karol Obert.
  - "Distributional semantics and flexibility in word meaning: the case of metaphor." UT LIN 373 Machine Learning Toolkit. Professor Jessy Li.
- Undergraduate Research Mentor
  - Isaiah Hogue, Mathematics 2020
  - Reese Feldmeier, Mathematics 2023
  - Isabel Erwin, Linguistics and Computer Science 2023
  - Nitin Sudarsanam, Computer Science 2024

DeepMay, Montreal, Canada 2023

- Instructor, *Machine Learning for Monsters*
- Designed and co-taught ten day intensive bootcamp course (open course: `https://github.com/deepmay/DM23-ml-for-monsters`) encompassing theoretical, practical, and critical approach to language modeling from the ground up.

Puppet Labs, Portland, OR, USA 2016-2017

- Mentored business analysts in data science tool Looker
- Co-taught weekly coding classes classes on Ruby

iUrbanTeen, Portland, OR, USA 2017

- Taught free 10-week iCode Workshop, an intensive introduction-to-programming course (HTML + JavaScript), to teens to teens from low-income backgrounds.

Reed College

- Syntax Tutor — Linguistics 2013-2015
  - Coached students 1:1 and organized small group sessions.

  - Topics covered: Introductory syntax, advanced syntax, LaTeX for linguistics.

- Logic Tutor — Philosophy 2014-2015
- Teaching Assistant — Mathematics Fall 2013-Fall 2014
  - *Introduction to Computer Science*
  - Graded theoretical and coding assignments.
  - Drop-in group & 1:1 tutor and classroom lab assistant.
  - Topics covered: finite automata, formal languages, computability theory, mechanical engineering, and algorithm design.

Reed College Science Outreach Program

- Lead Teacher 2013-2015
  - Led service-learning team in prep and presentation of weekly lessons to local middle schoolers.
- Teacher 2012-2013
  - Taught lessons in biology, chemistry, physics, and earth sciences to elementary school students across the Portland Metro area.

Cincinnati Museum Center Youth Programs, Cincinnati, Ohio, USA

- Senior Mentor 2012
  - Trained teenagers from low-income and homeschool backgrounds to volunteer in History, Children's and Natural History Museums.
  - Organized and chaperoned educational trips and college visits.
- Paid Docent, Duke Energy Children's Museum 2010-2011
  - Led educational demos, creative activities, and interpreted exhibits in in science, history, and the arts.
- Volunteer Docent 2007-2010

Professional Experience

Software Developer PolySync, Portland, OR 2017 - 2018

- Created cryptographic, high-assurance development pipeline for autonomous vehicles.
- Developed command-line developer tool based on an NYU algorithm to safeguard git repos against malicious metadata attacks.
- Managed hardware and software infrastructure, workstation provisioning, and cryptographic identity management.

Business Systems Developer Puppet, Portland, OR 2016 - 2017

- Designed and implemented company-wide data model

- Architected integration between Salesforce, internal data warehouse, and Amazon Marketplace.

Associate Business Systems Developer Puppet, Portland, OR 2015 - 2016

- Full stack developer using functional (Elixir+Phoenix) and object oriented (Ruby+Rails) frameworks.
- Performed sentiment analysis of online user-groups to track public opinion about the product.

Business Optimization Intern Summer 2014
Puppet, Portland, OR

- Performed topic-modeling on customer support emails to discover new reporting metrics.

Please refer to my Linkedin profile for a complete description of work experiences.

Professional Service

Program Committee Chair
- Texas Linguistics Society 2021

Invited Reviewer
- COLING 2025
- StarSEM Conference 2023
- TLS Conference 2020-2024

Department
- Mentor, UT Austin Refugee Mentorship Program 2022-2023
- Member, Executive Committee of the Association of Students of Linguistics 2022-2023
- Member, Computational Linguistics Job Search Committee 2021
- Member, Anti-Racism Committee 2022-2024
- Member, Open House Committee 2020, 2023

Languages

Native: English
Profiecient: Spanish, Italian
Intermediate: Russian, French
Rudimentary: Greek, Arabic, Hindi

Technical Skills

Scientific Computing: Python (pytorch, hugging-face, nltk, jupyter), R, bash scripting, Stata.

Languages & Frameworks: Elixir/Phoenix, Rust/Cargo, Ruby

Administration: Unix/Linux, advanced *git*, advanced PostgresSQL, GPG, Ansible/Puppet, AWS, Heroku.

Other Interests

Non-exhaustive and in no particular order: 'Pataphysics, OuliPo, religious iconography, forest defense, political organization, poetry, book arts, jewelry design, Twitter bots, boxing, and English etymology.