

# Cristina M. Aggazzotti

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## Education

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### Harvard University

PH.D. IN LINGUISTICS  
M.A. IN LINGUISTICS

Cambridge, MA

2019  
2017

### University College London

M.SC. IN COGNITIVE AND DECISION SCIENCES (Distinction)

London, UK

2013

### University of Southern California

B.A. IN APPLIED AND COMPUTATIONAL MATHEMATICS  
B.A. IN LINGUISTICS  
Magna Cum Laude; Renaissance Scholar

Los Angeles, CA

2011

## Research and Work Experience

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### Research Associate

HUMAN LANGUAGE TECHNOLOGY CENTER OF EXCELLENCE, JOHNS HOPKINS UNIVERSITY

Baltimore, MD

Oct. 2024 – Present

- Extend my previously-created speaker attribution benchmark by testing the capabilities of authorship attribution models on speech transcripts under various challenging settings
- Work toward robust and explainable attribution models by exploring model representations, biases, and performance

### Postdoctoral Fellow in Computer Science

HUMAN LANGUAGE TECHNOLOGY CENTER OF EXCELLENCE, JOHNS HOPKINS UNIVERSITY

Baltimore, MD

Aug. 2023 – Oct. 2024

- Established a new benchmark and state-of-the-art performance for speaker attribution—identifying a speaker based on the content of their speech (using syntax/semantics/lexicon)—as a supplement to speaker recognition methods, which analyze the speech signal (using acoustics/phonetics)
- Identified the need for speaker anonymization methods to obfuscate both the speech signal and speech content
- Resulted in a first author TACL journal publication and an acceptance for oral presentation at ACL 2024

### Postdoctoral Fellow in Linguistics

UNIVERSITÉ DU QUÉBEC À MONTRÉAL

Remote

May 2022 – Aug. 2023

- Developed and tested stylometric and neural authorship attribution models across genres, domains, and dataset sizes
- Identified forensic linguistic data needs and began developing standards for multidisciplinary data use
- Resulted in 3 forensic science and forensic linguistics conference presentations and 2 papers (in preparation)

### Academic Editor and Proofreader

FREELANCER

Remote

Feb. 2017 – Aug. 2023

- Edited and proofread journal papers, books, job/grant applications, and dissertations for non-native English speakers

### Visiting Research Scholar (Summer Camp for Applied Language Exploration)

HUMAN LANGUAGE TECHNOLOGY CENTER OF EXCELLENCE, JOHNS HOPKINS UNIVERSITY

Baltimore, MD

Jun. 2022 – Aug. 2022

- Experimented with schemas masking training data to explain neural author models' reliance on style versus content
- Developed a linguistic and stylometric feature model for determining authorship of various text types
- Resulted in a first author TACL journal publication and an acceptance for oral presentation at EMNLP 2023

### Research Contractor

INSTITUTE FOR LINGUISTIC EVIDENCE

Remote

2016 – 2018; Oct. 2021 – Apr. 2022

- Compared discriminant analysis (SPSS) and LSTM (Python) approaches to classifying suicide notes and last words
- Analyzed linguistic evidence across authors and text genres; researched statistical methods for presentation in court
- Resulted in 4 forensic science conference oral presentations and leading a half-day conference workshop

### Research Scientist and Customer Experience Engineer

POINTMAIL, INC. (STARTUP)

Cambridge, MA

Feb. 2018 – Jan. 2020

- Investigated ways to improve phrase- and sentence-level text prediction based on individual language usage and style
- Led bi-weekly team-wide research meetings and helped guide future research directions and product decisions
- Built rapport with customers, onboarded users, resolved customer issues, and elicited & evaluated customer feedback

## Graduate Researcher

HARVARD UNIVERSITY

Cambridge, MA

Aug. 2015 – May 2019

- Created a unified analysis of reflexives and reciprocals, implemented in synchronous tree adjoining grammar (a syntax-semantics hierarchical tree pairing system), and provided a novel extension of the formalism to capture morphology
- Developed a syntactic and semantic annotation scheme for reflexives using the Corpus of Contemporary American English by creating a hybrid classification system based on previous reflexives research and attested data
- Mentored 7 undergrads in annotation schemes, machine learning of anaphor data, and testing my model using OCaml

## Graduate Researcher

UNIVERSITY COLLEGE LONDON

London, UK

Sep. 2012 – Sep. 2013

- Created a formalized crime script of cash-in-transit robbery combining influence diagrams, causal models, Bayesian networks, and scripts that could ultimately be used by the police to identify effective prevention strategies

## Teaching and Mentoring Experience

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### Research Mentor

POLYGENCE

Remote

Sep. 2022 – Sep. 2023

- Mentored high school students through their first research project, resulting in papers and symposium presentations
- Advised high school students on academics and possible career paths based on their interests and goals

### Math/SAT Tutor and College Coach

CARNEGIE PREP, CAMBRIDGE COACHING, INVICTUS

Remote

Nov. 2021 – Aug. 2023

- Devised lesson plans and SAT test prep guides; tutored for the SAT and for math from elementary to college level
- Guided students through application essay writing and college admissions from start to finish

### Teaching Fellow

HARVARD UNIVERSITY

Cambridge, MA

Aug. 2016 – May 2018

- Assisted in teaching two intro linguistics classes (Distinction in Teaching Award for each) and an intro syntax class
- Created curricula for and taught as the primary instructor tutorials on computational linguistics and forensic linguistics

### Tutor and Careers Class Assistant

SUFFOLK COUNTY HOUSE OF CORRECTIONS; BOSTON COMM. CORRECTIONS CENTER

Boston, MA

Feb. 2015 – May 2016

- Taught English to Spanish-, Portuguese-, and Mandarin-speaking inmates; tutored men and women on probation/parole for the GED and assisted in a careers class creating resumes and helping with job applications

### Tutor and College Consultant

SELF-EMPLOYED

Newbury Park, CA

Sep. 2013 – Aug. 2014

- Tutored 30 students for the SAT, ACT, and all high school subjects; >300pt avg increase on SAT, 3pt avg increase on ACT
- Counseled 5 students through college selection, applications, resumes, and essays with successful admissions for all

## Publications and Presentations

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### • Can authorship attribution models distinguish speakers in speech transcripts?

Cristina Aggazzotti, Nicholas Andrews, and Elizabeth Allyn Smith.

*Transactions of the Association for Computational Linguistics* 12, pp. 875–891 (2024). To be presented at ACL 2024.

### • Can authorship representation learning capture stylistic features?

Andrew Wang\*, Cristina Aggazzotti\*, Rebecca Kotula, Rafael Rivera Soto, Marcus Bishop, and Nicholas Andrews.

*Transactions of the Association for Computational Linguistics* 11, pp. 1416–1431 (2023). Presentation at EMNLP 2023.

### • Testing authorship analysis on spoken language transcripts: Establishing a first benchmark.

Cristina Aggazzotti, Nicholas Andrews, and Elizabeth Allyn Smith.

*4<sup>th</sup> Focus Conference on Forensic Linguistics of the International Language and Law Association (ILLA)* (2023).

### • Authorship attribution across right-wing manifestos.

Cristina Aggazzotti and Elizabeth Allyn Smith.

*16<sup>th</sup> Biennial Conference of the International Association for Forensic and Legal Linguistics (IAFL)* (2023).

### • Disambiguating ‘ground truth’ for forensic applications in artificial intelligence.

Cristina Aggazzotti and Elizabeth Allyn Smith.

*Proceedings of the American Academy of Forensic Sciences Annual Conference*, vol. 29, p. 380 (2023).

- **A comparison of two computational approaches to analyzing last words.**  
Cristina Aggazzotti.  
*Proceedings of the American Academy of Forensic Sciences Annual Conference*, vol. 28, p. 483 (2022).
- **A quantitative comparison of last words to related text genres.**  
Cristina Aggazzotti.  
*Proceedings of the American Academy of Forensic Sciences Annual Conference*, vol. 28, p. 486 (2022).
- **A quantitative assessment of last words using Suicide Note Assessment REsearch (SNARE).**  
Cristina Aggazzotti.  
*Proceedings of the American Academy of Forensic Sciences Annual Conference*, vol. 27, p. 370 (2021).
- **Reflexives and reciprocals in synchronous tree adjoining grammar.**  
Cristina Aggazzotti and Stuart M. Shieber.  
*Proceedings of the 13<sup>th</sup> Int'l Workshop on Tree Adjoining Grammars and Related Formalisms*, pp. 31–42 (2017).
- **Communication strategies to minimize bias and strengthen scientific foundations in forensic science.**  
Cristina Aggazzotti, Katherine Ramsland, Carole E. Chaski, Elizabeth Allyn Smith, and Roderick T. Kennedy.  
*Proceedings of the American Academy of Forensic Sciences Annual Conference*, vol. 23, p. 38 (2017).
- **Confirmation bias and metalinguistic awareness.**  
Carole E. Chaski, Elizabeth Allyn Smith, and Cristina Aggazzotti.  
*Proceedings of the American Academy of Forensic Sciences Annual Conference*, vol. 22, p. 902 (2016).

## Skills

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- Computer** Python, GitHub,  $\LaTeX$ , MS Excel (intermediate); R, MATLAB, SPSS, OCaml (prior experience)  
**Linguistics** Computational linguistics, syntax, semantics, corpus annotation and statistics, tree adjoining grammar  
**Language** English (native), Italian (proficient), Spanish (intermediate), French (reading knowledge)  
**Soft skills** Adaptable, good communicator, detail-oriented, problem solver, team player, quick learner, enthusiastic

## Invited Talks

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- “Authorship Attribution” Los Angeles, CA  
*Guest lecture in Linguistics 412: Language and the Law*, University of Southern California Apr. 2022
- Research and Graduate School Panel Cambridge, MA  
*Panelist for BLISS/SHARP programs*, Harvard University July 2020, July 2018
- Linguists in Industry Panel Cambridge, MA  
*Panelist*, Harvard University Linguistics Department Feb. 2019
- “Forensic Linguistics” Cambridge, MA  
*Guest lectures in Linguistics 83 and Linguistics 101*, Harvard University Dec. 2018, Apr. 2017, Apr. 2016
- “When words deceive you—Finding clues to justice through linguistics” Albuquerque, NM  
*Speaker in the Continuing Legal Education program*, New Mexico State Bar Oct. 2017

## Mentoring and Leadership

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- Mentor for high school research projects**, Polygence 2022 – 2023  
**Mentor for incoming graduate students**, Harvard Linguistics Department 2015 – 2018  
**Assistant Head Tutor**, Harvard Linguistics Department 2017 – 2018  
**Language Universals Colloquium Co-organizer**, Harvard Linguistics Department 2015 – 2017  
**Captain**, Harvard Boxing Team 2016 – 2017

## Grants and Awards

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- Aug. 2018 **Research grant**, Harvard Linguistics Department  
 April 2018 **Research grant**, Harvard Institute for Quantitative Social Science  
 Sep. 2017 **Travel grant**, Harvard Institute for Quantitative Social Science  
 2016, 2017 **Conference grant**, Harvard Linguistics Department  
 2016, 2017 **Distinction in Teaching Award**, Bok Center for Teaching and Learning

## Interests

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- Traveling (71 countries, 46 U.S. states), learning new skills and hobbies, adventuring, sailing, music, crafts, sports