

Caleb Ziems

Curriculum Vitae

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*I use techniques from **NLP** and **Computational Social Science** to study **human behavior** and **communication** on the web. I am especially interested in understanding the **linguistic** and **psychological** processes that underlie effective **prosocial** and **antisocial** behaviors.*

Education

- 2020–2025 **Georgia Institute of Technology**, *Ph.D. in Computer Science*.
(anticipated) School of Interactive Computing
Advisor: Diyi Yang
- 2016–2020 **Emory University**, *B.S. in Computer Science (highest honors), B.A. in Mathematics*.
Cumulative GPA: 4.0/4.0
Thesis: *Towards More Robust Methods of Cyberbullying Detection*
Advisor: Ymir Vigfusson

Experience

- August 2020 – Present **Georgia Tech SALT Research Group**, *Graduate Research Assistant*.
Advisor: Diyi Yang
- Proposed an original project on framing-level political bias in generated text
- March 2020 – May 2020 **Georgia Tech CLAWS Research Group**, *Undergraduate Research Assistant*.
Advisor: Srijan Kumar
- Curated a new dataset of hate, counter-hate and neutral tweets in the context of COVID-19
 - Conducted statistical, linguistic, and geographic analysis of hate tweets and users who spread hate to reveal characteristic patterns of the origin, evolution, and spread of hate
 - Showed that hateful bots are more active, engaged, and successful than counterhate bots
- June 2019 – August 2019 **USC/ISI MINDS Research Group**, *NSF REU Intern*.
Advisor: Fred Morstatter
- Empirically demonstrated shortcomings in baseline NLP approaches to cyberbullying detection
 - Designed and implemented an original annotation framework on a new Twitter dataset
 - Engineered features from social and linguistic signals to improve cyberbullying classifiers
 - Published work at ICWSM 2020
- June 2018 – August 2018 **Stanford InfoLab**, *NSF REU Intern*.
Advisor: Srijan Kumar (PI: Jure Leskovec)
- Quantified the effects of “pump and dump” manipulations in cryptocurrency markets
 - Scraped, cleaned, and aggregated chat logs and time series data from currency exchanges
 - Built machine learning classifiers for identifying and predicting pump and dump schemes
 - Presented to an interdisciplinary audience of REU interns and Stanford faculty

August 2017 - **Emory Concept Mining Lab**, *Undergraduate Research Assistant*.

May 2018 Advisor: Phillip Wolff

- Proposed, designed, and implemented an original cognitive science project on future-thinking
- Found a weak positive correlation between a Twitter user's social network centrality and the ratio of future-oriented tweets in the user's timeline
- Presented at the Spring Undergraduate Research Symposium at Emory University

Papers

2020 **Ziems, C.**, He, B., Soni, S., & Kumar, S. (2020). Racism is a Virus: Anti-Asian Pre-Print Hate and Counterhate in Social Media during the COVID-19 Crisis. arXiv preprint arXiv:2005.12423. *Submitted to ICWSM 2021*. [PDF](#).

Included in the curriculum at [Stanford University](#).

2020 **Ziems, C.**, Vigfusson, Y., & Morstatter, F. (2020) Aggressive, Repetitive, Intentional, ICWSM Visible, and Imbalanced: Refining Representations for Cyberbullying Classification. In Proceedings of the 14th International AAAI Conference on Web and Social Media. *Presented at ICWSM 2020* [PDF](#).

Honorable Mention for Best Paper Award.

Teaching

August 2017 - **Emory Office for Undergraduate Education**, *EPASS Peer Tutor*.

- May 2018
- Worked one-on-one with 10 to 20 different undergraduates each semester
 - Explained Calculus I and II concepts, designed problem sets, and offered individual feedback

Awards and Honors

June 2020 **Honorable Mention for Best Paper**, *ICWSM 2020*.

May 2020 **Summa Cum Laude**, *Emory University Computer Science Department*.

May 2020 **Academic Excellence Award**, *Emory University Computer Science Department*.

November **Phi Beta Kappa**.

2018 Elected as a Junior

August 2017 **Norman C. and Henry J. Miller Dean's Achievement Scholarship**.

\$30,000 scholarship recognizing academic achievement, leadership, and community involvement

Skills

Languages Python, Java, MATLAB, C, Prolog, Scheme (LISP), Objective-C

Libraries PyTorch, Scikit-learn, Pandas, NLTK, Stanford CoreNLP, NetworkX, Tweepy

Tools HTML/CSS, PostgreSQL, Github, \LaTeX , Amazon Mechanical Turk API

Software Bash, Vim, Gephi, Jupyter, Eclipse