

# Alyssa Hwang

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## EDUCATION

### University of Pennsylvania, School of Engineering and Applied Science

PhD in Computer Science | Sept 2020-Present

### Columbia University, Fu Foundation School of Engineering and Applied Science

Egleston Scholar

BS in Computer Science | May 2020

## HONORS

- 2020 Columbia University Theodore R. Bashkow Award
- 2020 National Science Foundation Graduate Research Fellowship
- 2019 Google Grace Hopper Celebration Travel Scholarship
- 2018 Johnson & Johnson Program Summer Research Grant
- 2018 Data Science Institute Scholars Program and Grant
- 2016 Elks National Foundation Most Valuable Student Scholarship National Finalist

## PROFESSIONAL EXPERIENCE

### Software Engineering Intern, Google, Mountain View, CA (Remote), Summer 2020

- Build hierarchical RNN + CRF model for dialogue act recognition using Tensorflow and BERT embeddings.

### Software Engineering Intern, Google, Mountain View, CA, Summer 2019

- Expand image results for events displayed on Search from one directly pulled from the markup to multiple queried from an external API.

## PUBLICATIONS AND PRESENTATIONS

Tuhin Chakrabarty, Christopher Hidey, Smaranda Muresan, Kathy McKeown, **Alyssa Hwang**. “AMPERSAND: Argument Mining for PERSuasive oNline Discussions.” *Empirical Methods in Natural Language Processing* 2019.

**Alyssa Hwang** and Christopher Hidey. “Confirming the Non-compositionality of Idioms for Sentiment Analysis.” *ACL Joint Workshop on Multiword Expressions and WordNet* 2019.

**Alyssa Hwang**. “Evaluation of Hate Speech Labeling in Gang-Related Tweets.” *Harvard National Collegiate Research Experience* 2019. Poster Presentation.

**Alyssa Hwang**. “Citation Spans of Hyperlinks in Change My View Posts.” *Stanford Research Conference* 2018. Poster Presentation.

**Alyssa Hwang.** “Persuasive Characteristics of Hyperlinks in Change My View Posts.” *Harvard National Research Conference* 2018. Poster Presentation.

Christopher Hidey, Elena Musi, **Alyssa Hwang**, Smaranda Muresan, and Kathy McKeown. “Analyzing the Semantic Types of Claims and Premises in an Online Persuasive Forum.” *EMNLP Workshop on Argument Mining* 2017.

**Alyssa Hwang** and Sara Chung. “A Novel Stimulus and Analysis System for Studying the Neural Mechanisms of Natural Language Processing in the Human Brain.” *International Workshop on Natural Language Processing and Cognitive Science* 2015.

## RESEARCH EXPERIENCE

**Columbia University, Natural Language Text Processing Lab**, New York, NY

Senior Thesis: Advised by Professor Kathleen McKeown, Fall 2019-Present

- Cluster unknown words in Twitter African American English, Gang Violence, and Brown Corpus datasets to improve methods for learning new slang and dialectal English.

**Columbia University, Natural Language Text Processing Lab**, New York, NY

Idiom Sentiment Analysis: Advised by Christopher Hidey, Fall 2018-Spring 2019

- Analyze the sentiment of idiomatic multiword expressions to show that idioms are not compositional for emotional content.

**Columbia University, Data Science Institute**, New York, NY

Hate Speech Classification: Advised by Profs. Kathleen McKeown, Eugene Wu, Summer 2018

- Integrate Keras model with Deep Neural Inspector to evaluate the correlation between node activity and hypothesis functions to analyze what each node and layer has learned.

**Columbia University, Natural Language Text Processing Lab**, New York, NY

Hyperlink Citation Span Detection: Advised by Christopher Hidey, Fall 2017-Spring 2018

- Program automatic window labeling to predict the citation spans of hyperlinks found in Change My View posts (PRAW, BeautifulSoup, Newspaper, SpaCy, sklearn).

**Columbia University, Natural Language Text Processing Lab**, New York, NY

Arg. Mining: Advised by Christopher Hidey, Smaranda Muresan, Elena Musi, Summer 2017

- Design annotation scheme in XML for detecting modes in argumentation, types of claims, and premise-claim relations.

**Columbia University, Natural Language Text Processing Lab**, New York, NY

Arg. Mining: Advised by Christopher Hidey

- Annotate and gather data for modes in argumentation, types of claims, and premise-claim relations from the Change My View Subreddit.

## TEACHING EXPERIENCE

**Teaching Assistant**, Natural Language Processing, Columbia University, Spring 2020

- For class of 80 undergraduate and graduate students instructed by Michael Collins: lead TA team, grade homework, and host weekly office hours while balancing challenges of COVID-19 crisis.

**Teaching Assistant**, Natural Language Processing, Columbia University, Fall 2019

- For class of 100 undergraduate and graduate students instructed by Kathleen McKeown: prepare homework solutions, grade biweekly homework, midterm, and final, host weekly office hours, and answer online discussion board questions.

**Teaching Assistant**, Natural Language Processing, Columbia University, Spring 2019

- For class of 154 undergraduate and graduate students instructed by Michael Collins: organize TA logistics, write grading scripts, update homework skeleton code from Python2 to Python3, grade biweekly homework, midterm, and final, host weekly office hours, and answer online discussion board questions.

**Teaching Assistant**, Intro. to Java, Columbia University, Summer 2018

- Design curriculum for introductory Java and advise 20 high school students.

**Teaching Assistant**, Web Dev. in Python, Columbia University, Summer 2018

- Design curriculum for introductory Python and web development tools like AWS and Maven, advise 20 high school students, and teach “Git Better” workshop for advanced Git skills.

## SERVICE

**Interviewer, Mentor, Tour Guide**, Undergraduate Recruitment Committee, Fall 2017-Present

- Interview 10 applicants per cycle, mentor incoming first years with focus on women in engineering and CS, conduct weekly tours to 20+ attendees.

**Program Leader**, Eggleston Scholars Program, Fall 2018-Present

- Advise younger scholars on areas related to engineering education and career development, organize mentorship groups for 53 scholars, plan monthly community bonding events.

**Operations Committee Member**, Columbia University Food Pantry, Fall 2018-Present

- Supervise volunteer shifts, take inventory, accept deliveries, and oversee general operations.

## SKILLS

**Programming Languages:** Python, C/C++, Java, R

**Tools:** SpaCy, sklearn, Pandas, NumPy, PyTorch, Tensorflow