

Alyssa Hwang

ahwang16@seas.upenn.edu • alyssahwang.com • (201) 618-2447

Modified: January 19, 2023

Education

- Sept 2020 – Present **University of Pennsylvania** – Philadelphia, PA
PhD in Computer and Information Science
Advisors: [Andrew Head](#), [Chris Callison-Burch](#)
- May 2020 **Columbia University** – New York, NY
BS in Computer Science
Advisor: [Kathleen McKeown](#)
Thesis: [Towards Augmenting Lexical Resources for Slang and African American English](#)

Research Interests

I design interfaces and develop models that help us interact with complex information. I am primarily interested in voice assistants, large language models, and explainable AI. I am currently working on exposing challenges for voice assistants that guide users through complex instructions (Penn) and leveraging LLMs to create a dataset for query-based multi-document summarization (AWS). I am broadly interested in Human-AI Interaction and human-centered NLP.

Honors

- 2022 **Amazon Alexa Taskbot Competition** Finalist Team
- 2022 **CRA-WP Grad Cohort for Women** Invited Attendee
- 2020 **Columbia University** Theodore R. Bashkow Award
Presented to a computer science senior who has excelled in independent projects.
- 2020 **National Science Foundation** Graduate Research Fellowship Program
- 2019 **Google** Grace Hopper Celebration Travel Scholarship
- 2018 **Johnson & Johnson** Summer Research Grant
- 2018 **Columbia University** Data Science Institute Scholars Program and Grant
- 2016 **Elks National Foundation** Most Valuable Student Scholarship National Finalist

Academic Research Experience

University of Pennsylvania Penn HCI and Penn NLP

Sept 2021 – *Challenges for Designing Voice Assistants that Guide Users through Complex Tasks*
Present Conduct in-depth, at-home observations of participants cooking while being guided by an Amazon Alexa to understand the challenges for complex task guidance.
Expected submission to DIS in February 2023.
Advisors: [Andrew Head](#), [Chris Callison-Burch](#)

University of Pennsylvania Penn NLP

Sept 2020 – *On the Cognition of Grammatical Gender*
May 2021 Study the possible effects of grammatical gender on cognition by finding statistically significant relationships between gendered nouns and the adjectives/verbs they co-occur with.
Advisor: [Chris Callison-Burch](#)

Columbia University Natural Language Text Processing Lab

Sept 2019 – *Towards Augmenting Lexical Resources for Slang and African American English*
May 2020 Cluster unknown words in Twitter African American English, Gang Violence, and Brown Corpus datasets to improve methods for learning new slang and different dialects of English.
Undergraduate Thesis Advisor: [Kathleen McKeown](#)

Sept 2018 – *Confirming the Non-compositionality of Idioms for Sentiment Analysis*
May 2020 Analyze the sentiment of idiomatic multiword expressions to show that idioms are not compositional for emotional content.
Mentor: [Christopher Hidey](#)

Sept 2017 – *Detecting and Characterizing Spans of Hyperlinks in Change My View Posts*
May 2018 Program automatic window labeling to predict the citation spans of hyperlinks found in Change My View posts (PRAW, BeautifulSoup, Newspaper, SpaCy, sklearn).
Mentor: [Christopher Hidey](#)

Sept 2016 – *Analyzing the Semantic Types of Claims and Premises in an Online Persuasive Forum*
Sept 2017 Design annotation scheme in XML for detecting modes in argumentation, types of claims, and premise-claim relations; annotate and gather data for modes in argumentation, types of claims, and premise-claim relations from the Change My View Subreddit.
Mentors: [Christopher Hidey](#), [Smaranda Muresan](#), [Elena Musi](#)

Columbia University Data Science Institute

Summer 2018 *Explaining Hate Speech Classification with Deep Neural Inspector*
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.
Mentors: [Eugene Wu](#), [Kathleen McKeown](#), [Thibault Sellam](#)

Industry Research Experience

Summer 2022 **AWS Comprehend** (Applied Scientist Intern) – New York, NY
Creating a Dataset for Query-Based Multi-Document Summarization
Explore zero-shot performance across a variety of large language models, develop cross-domain training method, and partner with data linguist team to produce and evaluate a dataset for query-based multi-document summarization (containing questions, summaries, and clusters of source documents).
Expected submission to ACL in January 2023.
Hosts: [Kathleen McKeown](#), Kalpit Dixit

Summer 2021 **Google** (Software Engineering Intern) – Pittsburgh, PA
Image Ranking for Shopping
Design clustering and ranking algorithm to display top user-submitted review images for Shopping; analyze image data and propose signal thresholds to identify low-quality images.
Hosts: Wei Wan, [Tao Chen](#)

Summer 2020 **Google** (Software Engineering Intern) – Mountain View, CA
Dialogue Act Recognition for Dialogflow
Train hierarchical RNN + CRF model for dialogue act recognition using Tensorflow and BERT embeddings.
Hosts: Chuan Wang, [Igor Poletaev](#)

Publications

VarDial 2020 **Towards Augmenting Lexical Resources for Slang and African American English**
Alyssa Hwang, William R. Frey, and Kathleen McKeown
COLING 7th Workshop on NLP for Similar Languages, Varieties and Dialects 2020

- EMNLP 2019 **AMPERSAND: Argument Mining for PERSuAsive oNline Discussions**
 Tuhin Chakrabarty, Christopher Hidey, Smaranda Muresan, Kathy McKeown, **Alyssa Hwang**
Conference on Empirical Methods in Natural Language Processing and the 9th International Joint Conference on Natural Language Processing (2019).
- MWE-WN 2019 **Confirming the Non-compositionality of Idioms for Sentiment Analysis**
Alyssa Hwang and Christopher Hidey
ACL 15th Joint Workshop on Multiword Expressions and WordNet (2019)
- ArgMining
 2017 **Analyzing the Semantic Types of Claims and Premises in an Online Persuasive Forum**
 Christopher Hidey, Elena Musi, **Alyssa Hwang**, Smaranda Muresan, and Kathleen McKeown
ACL 4th Workshop on Argument Mining (2017)

Teaching

- Fall 2022 **Head TA**, CIS 3990 Introduction to Human-Computer Interaction
 Instructor: [Danaë Metaxa](#) (University of Pennsylvania)
- Fall 2021 **Teaching Assistant**, CIS 5300 Computational Linguistics
 Instructor: [Mark Yatskar](#) (University of Pennsylvania)
- Spring 2019,
 Spring 2020 **Teaching Assistant**, COMS 4705 Natural Language Processing
 Instructor: [Michael Collins](#) (Columbia University)
- Fall 2019 **Teaching Assistant**, COMS 4705 Natural Language Processing
 Instructor: [Kathleen McKeown](#) (Columbia University)
- Summer 2018 **Teaching Assistant**, Intro. to Java & Web Dev. in Python
 Instructor: Brandon Mazey (Columbia University Pre-college Programs)

Research Mentoring

- Summer 2022 Juni Kim (Independent Study)
- Spring 2022 Jasmine Chen (Undergraduate Thesis)

Service

May 2022 – Present	Penn CIS PhD Mentorship Program <i>Founder</i> Launch Mentorship Program for PhD students in the Department of Computer and Information Science at the University of Pennsylvania, where first- and second-years are matched with senior students and invited to monthly social events.
Sept 2020 – Present	Computer and Information Science Doctoral Association (CISDA) <i>Co-Chair</i> Lead group of elected students that advocates for student interests, liaises with faculty leaders of the Department of Computer and Information Science and School of Engineering and Applied Science, and communicates department affairs to the wider student body.
Sept 2021 – May 2022	Penn Engineering Dean’s Doctoral Advisory Board <i>Elected Representative</i> Represent PhD students of the Department of Computer and Information Science at monthly meetings with Associate Dean for Graduate Programs Boon Thau Loo.
March – Oct 2021	MindCORE Diversity and Equity Initiative (DivE In) <i>Programming Development Committee Lead</i> Lead the Programming Development Committee and sit on Steering Committee for the inaugural DivE In, a fully funded weekend of workshops for undergraduate students from underrepresented communities who are interested in graduate study in the mind sciences.
Sept – Dec 2020	Penn CIS Applicant-Support Program <i>Program Leader</i> Match PhD applicants from underrepresented communities with current Penn CIS PhD students for guidance throughout application process.

Outreach

Nov 2022	MindCORE Diversity and Equity Initiative (DivE In) <i>Invited Speaker</i> , Overview of the PhD Application Process
Nov 2021	University of Pennsylvania School of Engineering and Applied Science <i>Invited Panelist</i> , PhD Open House
March 2021	ACM Capital Region Celebration of Women in Computing (CAPWIC) <i>Invited Panelist</i> , Graduate School: Is It Right for Me?
Jan 2021	University of Pennsylvania School of Engineering and Applied Science <i>Invited Panelist</i> , Graduate Recruitment Panel

- Nov 2020 **University of Pennsylvania School of Engineering and Applied Science**
Invited Panelist, PhD Open House
- Oct 2020 **Columbia University Department of Computer Science**
Invited Speaker, Alumni-In-Residence Discussion