

Alyssa Hwang

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Research Interests

I work on AI interfaces that deliver complex information. Recently, I have investigated GPT-Vision for describing images, proposed guidelines for task guidance through voice assistants, and established a new qualitative analysis framework for evaluating LLMs based on techniques from the social sciences and HCI. I am now thinking about leveraging LLMs to empower listeners to navigate through audiobooks more fluidly.

Education

Sept 2020–Present

University of Pennsylvania – Philadelphia, PA

PhD in Computer and Information Science

MSE in Computer and Information Science

Advisors: [Andrew Head](#), [Chris Callison-Burch](#)

Thesis topic: AI interfaces for effectively delivering complex information

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](#)

Work Experience

Summer 2022

AWS Comprehend (Applied Scientist Intern) – New York, NY

NewsQs: Multi-Source Question Generation for the Inquiring Mind

Hosts: [Kathleen McKeown](#), Kalpit Dixit

Summer 2021

Google (Software Engineering Intern) – Pittsburgh, PA

Image Ranking for Shopping

Hosts: Wei Wan, [Tao Chen](#)

Summer 2020

Google (Software Engineering Intern) – Mountain View, CA

Dialogue Act Recognition for Dialogflow

Hosts: Chuan Wang, [Igor Poletaev](#)

Honors

- 2023 **OpenAI**, DevDay Invited Attendee
- 2023 **Penn Engineering**, Outstanding Service Award
- 2022 **Amazon Alexa Prize Taskbot Competition**, Finalist Team
- 2022 **CRA-WP Grad Cohort for Women**, Invited Attendee
- 2020 **Columbia University**, Theodore R. Bashkow Award
Presented to a senior in computer science 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

Publications, Articles, and Preprints

** Equal contribution*

- arXiv 2023 **Grounded Intuition of GPT-Vision's Abilities with Scientific Figures**
Alyssa Hwang, Andrew Head, Chris Callison-Burch
[arXiv preprint](#).
- CHI 2024 **Ivie: Lightweight Anchored Explanations of Just-Generated Code**
Litao Yan, **Alyssa Hwang**, Zhiyuan Wu, Andrew Head
ACM Conference on Human Factors in Computing Systems (in submission).
- NLP-OSS 2023 **Kani: A Lightweight and Highly Hackable Framework for Building Language Model Applications**
Andrew Zhu*, Liam Dugan*, **Alyssa Hwang**, Chris Callison-Burch
Workshop for Natural Language Processing Open-Source Software (co-located with EMNLP) (to appear). [OpenReview preprint](#).
- arXiv 2023 **Large Language Models as Sous Chefs: Revising Recipes with GPT-3**
Alyssa Hwang*, Bryan Li*, Zhaoyi Hou*, Dan Roth
[arXiv preprint](#).
- in preparation **NewsQs: Multi-Source Question Generation for the Inquiring Mind**
Alyssa Hwang, Kalpit Dixit, Miguel Ballesteros, Yassine Benajiba, Vittorio Castelli, Markus Dreyer, Mohit Bansal, Kathleen McKeown
Work conducted during an internship at AWS AI Labs (in preparation).

- DIS 2023 **Rewriting the Script: Adapting Text Instructions for Voice Interaction**
 Alyssa Hwang, Natasha Oza, Chris Callison-Burch, Andrew Head
ACM Conference on Designing Interactive Systems.
- Amazon 2022 **QuakerBot: A Household Dialog System Powered by Large Language Models**
 Artemis Panagopoulou, Manni Arora, Li Zhang, Dimitri Cugini, Weiqiu You, Yue Yang, Liyang Zhou, Yuxuan Wang, Zhaoyi Hou, **Alyssa Hwang**, Lara Martin, Sherry Shi, Chris Callison-Burch, Mark Yatskar
Alexa Prize Taskbot Proceedings.
- VarDial 2020 **Towards Augmenting Lexical Resources for Slang and African American English**
 Alyssa Hwang, William R. Frey, and Kathleen McKeown
Workshop on NLP for Similar Languages, Varieties and Dialects (co-located with COLING).
- EMNLP 2019 **AMPERSAND: Argument Mining for PERSuAsive oNline Discussions**
 Tuhin Chakrabarty, Christopher Hidey, Smaranda Muresan, Kathy McKeown, **Alyssa Hwang**
2019 Conference on Empirical Methods in Natural Language Processing and 9th International Joint Conference on Natural Language Processing.
- MWE-WN 2019 **Confirming the Non-compositionality of Idioms for Sentiment Analysis**
 Alyssa Hwang and Christopher Hidey
Joint Workshop on Multiword Expressions and WordNet (co-located with ACL).
- 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
Workshop on Argument Mining (co-located with ACL).

Invited Talks

- Sept 18, 2023 **University of Pennsylvania Computational Linguistics Lunch (CLunch)**
 Rewriting the Script: Adapting Text Instructions for Voice Interaction

Selected Media and Impact

- Nov 16, 2023 **A Peak into the Future of Visual Data Interpretation**
Nathi Magubane, [Penn Today](#).
- Nov 7, 2023 **ChatGPT-Maker OpenAI Hosts its First Big Tech Showcase as the AI Startup Faces Growing Competition**
Barbara Ortutay and Matt O'Brien, [Associated Press](#).
Reposted by The Independent, ABC News, Washington Post, U.S. News & World Report, The Business Journal, CBS News, and others.
- Nov 6, 2023 **As OpenAI's Multimodal API Launches Broadly, Research Shows It's Still Flawed**
Kyle Wiggers, [TechCrunch](#)
- Oct 2, 2023 **Rewriting the Script: Developing Effective AI Assistants**
Alyssa Hwang, [Penn Engineering Today](#).
- Sept 23, 2023 **Top Trending LLM Projects of the Week: Dive into the Future of Tech!**
AutoGPT Tutorials, [YouTube](#).
- Sept 20, 2023 **Kani, an Open-Source Framework from the University of Pennsylvania, is Reshaping Large Language Model Applications**
[Multiplatform.ai](#).
- Sept 19, 2023 **Kani: A Lightweight and Customizable Framework for Language Model Applications**
Michał Rogucki, [TS2 Space](#).
- Sept 19, 2023 **Unlocking AI Potential: Unveiling Kani, the Groundbreaking Open-Source Framework Revolutionizing Large Language Model Applications**
Casey Jones, [CJ&CO](#).
- Sept 18, 2023 **Researchers from the University of Pennsylvania Introduce Kani: A Lightweight, Flexible, and Model-Agnostic Open-Source AI Framework for Building Language Model Applications**
Tanya Malhotra, [MarkTechPost](#).
- Feb 19, 2021 **Doctorates do Valentines!**
Eboney Johnson, [Official Blog of the Penn Dept. of Computer and Information Science](#).

Teaching

- Fall 2022 **Head Teaching Assistant**, 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 2020 **Teaching Assistant**, COMS 4705 Natural Language Processing
Spring 2019 Instructor: [Michael Collins](#) (Columbia University)
- Fall 2019 **Teaching Assistant**, COMS 4705 Natural Language Processing
Instructor: [Kathleen McKeown](#) (Columbia University)

Mentoring

- Fall 2023– Matthew Burke, Ryan Hsing-Smith, Bryan Yao, Joseph Koo,
Spring 2024 Sebastian Lee, Zachary Arnold (Senior Design Project)
- Summer 2022 Juni Kim (Independent Study)
- Spring 2022 Jasmine Chen (Undergraduate Thesis)

Outreach

- Sept 2023 **University of Pennsylvania Department of Computer and Information Science**
Invited Panelist, PhD New Student Orientation
- Nov 2022 **MindCORE Diversity and Equity Initiative (DivE In)**
Invited Speaker, Overview of the PhD Application Process
- Nov 2021, 2020 **University of Pennsylvania School of Engineering and Applied Science**
Invited Panelist, PhD Open House
- Mar 2021 **ACM Capital Region Celebration of Women in Computing (CAPWIC)**
Invited Panelist, Graduate School: Is It Right for Me?
- Jan 2021 **University of Pennsylvania School of Engineering and Applied Science**
Invited Panelist, Graduate Recruitment Panel
- Oct 2020 **Columbia University Department of Computer Science**
Invited Speaker, Alumni-In-Residence Discussion

Leadership

- May 2022–Present **Penn CIS PhD Mentorship Program**
Founder
Launch Mentorship Program for CIS PhD students, 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)**
Co-Chair
Lead group of elected students that advocates for student interests and liaises with faculty leaders of CIS and Penn Engineering.
- Sept 2022–
May 2023 **Department of Computer and Information Science Office Committee**
PhD Representative
Coordinate seat assignments and other office logistics for CIS PhD students.
- Sept 2021–
May 2022 **Penn Engineering Dean’s Doctoral Advisory Board**
PhD Representative
Represent PhD students of the Department of Computer and Information Science at monthly meetings with Associate Dean for Graduate Programs Boon Thau Loo.
- Sept–Dec 2021 **Penn NLP Computational Linguistics Lunch (CLunch)**
Co-organizer
Coordinate speakers for Computational Linguistics seminar series.
- Mar–Oct 2021 **MindCORE Diversity and Equity Initiative (DivE In)**
Programming Development Committee Lead
Lead the Programming Development and sit on Steering Committees for the inaugural DivE In, a fully funded weekend of workshops for underrepresented undergraduates who are interested in the mind sciences. [Media coverage on OMNIA](#).