

Alyssa Hwang

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Research Interests

I study how conversational assistants can be more efficient, interactive, and fluid communicators. I am particularly interested in leveraging large language models to help users manage many details at once through voice, text, or AR/VR assistants.

Education

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| Sept 2020–Present | University of Pennsylvania – Philadelphia, PA |
| Expected May 2026 | <i>PhD</i> in Computer and Information Science |
| Dec 2023 | <i>MS</i> in Computer and Information Science |
| | <i>Advisors:</i> Andrew Head , Chris Callison-Burch |
| | <i>Thesis topic:</i> Supporting fluid and informative conversations with large language models |
| May 2020 | Columbia University – New York, NY |
| | <i>BS</i> in Computer Science |
| | <i>Advisor:</i> Kathleen McKeown |
| | <i>Thesis:</i> Towards Augmenting Lexical Resources for Slang and African American English |

Work Experience

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| Summer 2022 | AWS Comprehend (Applied Scientist Intern) – New York, NY |
| | <i>NewsQs:</i> <i>Multi-Source Question Generation for the Inquiring Mind</i> |
| | <i>Hosts:</i> Kathleen McKeown , Kalpit Dixit |
| Summer 2021 | Google (Software Engineering Intern) – Pittsburgh, PA |
| | <i>Image Ranking for Shopping</i> |
| | <i>Hosts:</i> Wei Wan, Tao Chen |
| Summer 2020 | Google (Software Engineering Intern) – Mountain View, CA |
| | <i>Dialogue Act Recognition for Dialogflow</i> |
| | <i>Hosts:</i> 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*

- To appear at
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 (to appear).
- arXiv 2023 **Grounded Intuition of GPT-Vision's Abilities with Scientific Figures**
Alyssa Hwang, Andrew Head, Chris Callison-Burch
[*arXiv preprint.*](#)
- 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 prep **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

- Apr 17, 2024 **Columbia University Natural Language Processing Seminar**
 Human-centered Goals, Methods, and Evaluation for Large Language Models (tentative)
- Mar 21, 2024 **Google**
 Human-centered Opportunities for Conversational Assistants (tentative)
- Feb 9, 2024 **Women in Data Science @ Penn**
 Human-centered AI Research and Design
- Jan 29, 2024 **University of Pennsylvania Computational Linguistics Lunch (CLunch)**
 Developing Grounded Intuition of Large Language Models

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 162 US news outlets, including The Independent, ABC News, Washington Post, U.S. News & World Report, The Business Journal, and CBS News.

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 <i>Founder</i>
Sept 2020–Present	Computer and Information Science Doctoral Association (CISDA) <i>Co-Chair</i> Advocate for student interests and liaise with faculty of CIS and Penn Engineering.
Sept 2022– May 2023	Department of Computer and Information Science Office Committee <i>PhD Representative</i>
Sept 2021– May 2022	Penn Engineering Dean’s Doctoral Advisory Board <i>PhD Representative</i>
Sept–Dec 2021	Penn NLP Computational Linguistics Lunch (CLunch) <i>Co-organizer</i>
Mar–Oct 2021	MindCORE Diversity and Equity Initiative (DivE In) <i>Programming Development Committee Lead, Steering Committee Member</i> Collaborate across departments to establish inaugural DivE In, a fully funded weekend of workshops for underrepresented undergraduates in the mind sciences.