Alyssa Hwang

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Research Interests

I work on AI assistants that effectively deliver complex information. I recently released an in-depth investigation on alt text generation with GPT-Vision while formalizing a qualitative analysis method based on techniques in social science and HCI. Previously, I conducted an in-depth observational study to propose guidelines for adapting text instructions for voice assistants. I am currently thinking about leveraging LLMs to help users fluidly navigate information while listening to audiobooks—like "fast-forwarding" one paragraph at a time rather than fifteen-second intervals.

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

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).*

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 7, 2023   **Introducing Kani (Sanskrit Word):**
A Game-Changing Open-Source AI Framework for Language Models
Sateesh Hegde, *Medium*.
Kani was originally named after the Japanese word for crab and coincidentally means
"knowledge" in Sanskrit.

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 21, 2023   **kani: lightweight LLM framework (Japanese)**
Hamachi, *note*.

Sept 20, 2023   **Kani, an Open-Source Framework from the University of Pennsylvania, is**
Reshaping Large Language Model Applications
Multiplatform.ai.

Sept 19, 2023   **What is Trending in AI Research?: InstaFlow + Kani + Slot-TTA + MagiCapture**
+ What is Trending in AI Tools?
ASIF RAZZAQ, *MarkTechPost*

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!**
Ebonee Johnson, *Official Blog of the Penn Dept. of Computer and Information Science*.

Invited Talks

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

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 *Di*versity and *E*quity *In*itiative (DivE In)**
Invited Speaker, Overview of the PhD Application Process

Nov 2021 **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

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

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 *Di*versity and *E*quity *In*itiative (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.