Alyssa Hwang

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Research Interests

I conduct in-depth, user-centered studies to explore how generative AI can be integrated into information-dense documents to make them easier to understand. I focus on fine-grained augmentations, which augment documents at the level of a phrase or image segment. I am experienced with prototyping, usability studies, and interface design.

Education

Sept 2020–Present	**University of Pennsylvania** – Philadelphia, PA
Expected Dec 2025	*PhD* in Computer and Information Science
Dec 2023	*MS* in Computer and Information Science
	Advisors: Boon Thau Loo, Andrew Head
	Thesis topic: User interfaces for fine-grained integration of 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

Industry 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

2025   **Interactive Figure-Text Integration at Document Scale**
Alyssa Hwang, Hita Kambhamettu, Yue Yang, Ajay Patel,
Joseph Chee Chang, Andrew Head.
In preparation.

arXiv 2025   **Attribution Gradients: Citation Sensemaking of Attributed AI Answers with Incrementally Unfoldable Context**
Hita Kambhamettu, **Alyssa Hwang**, Philippe Laban, Andrew Head.
arXiv preprint (in submission).

arXiv 2024   **JumpStarter: Human-AI Planning with Task-Structured Context Curation**
Sitong Wang*, Xuanming Zhang*, Jenny Ma, **Alyssa Hwang**, Lydia Chilton.
arXiv preprint (in submission).

ACL 2024   **RAID: A Shared Benchmark for Robust Evaluation of Machine-Generated Text Detectors**
Liam Dugan, **Alyssa Hwang**, Filip Trhlík, Josh Magnus Ludan, Andrew Zhu, Hainiu Xu,
Daphne Ippolito, Chris Callison-Burch.
Association for Computational Linguistics.

ACL 2024   **FanOutQA: Multi-Hop, Multi-Document Question Answering for Large Language Models**
Andrew Zhu, **Alyssa Hwang**, Liam Dugan, Chris Callison-Burch.
Association for Computational Linguistics.

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.

arXiv 2024   **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. arXiv preprint.

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).

arXiv 2023   **Large Language Models as Sous Chefs: Revising Recipes with GPT-3**
Alyssa Hwang*, Bryan Li*, Zhaoyi Hou*, Dan Roth
arXiv preprint.

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).*

Invited Talks

Nov 20, 2024	**The Ethics Institute at Kent Place School** *Rethinking Ethical Behavior for Oneself Online Together (REBOOT) assembly* Authorship Matters in Generative AI
Apr 18, 2024	**Google People and AI Research (PAIR) Machine Learning** A Principled Approach to Developing Grounded Intuition of Generative Models
Apr 17, 2024	**Columbia University Natural Language Processing Seminar** Rewriting the Script: Human-Centered Opportunities for Natural Language Processing
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

Dec 5, 2024	**AI's Hidden Challenges: A Conversation with Alyssa Hwang** Season 3 Episode 4, *Tapping In* podcast.
Sept 9, 2024	**AI Detectors are Easily Fooled, Researchers Find** Colin Wood, *EdScoop*.

| Sept 3, 2024 | **Teachers Still Can't Trust AI Text Checkers** |
| | Megan Morrone, *Axios*. |

| Mar 1, 2024 | **Wider Perspectives** |
| | Laura J. Cole, *Kent Place Magazine* (cover story). |

| 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 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*. |

Teaching

| Fall 2022 | **Head Teaching Assistant**, CIS 3990 Introduction to Human-Computer Interaction |
| | Instructor: Danaé 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 2025–Present	Mialy Rasetarinera (Penn CIS PhD Mentorship Program)
Spring 2024	Emma Jin (Master's Independent Study and Career Development)
Fall 2023– Spring 2024	Matthew Burke, Ryan Hsing-Smith, Bryan Yao, Joseph Koo, Sebastian Lee, Zachary Arnold (Undergraduate Senior Design Project)
Summer 2022	Juni Kim (High School Independent Study)
Spring 2022	Jasmine Chen (Undergraduate Thesis)

Outreach

Sept 2023	**University of Pennsylvania Dept. of Computer and Information Science** *Invited Panelist*, PhD New Student Orientation
Nov 2022	**MindCORE *Div*ersity and *E*quity *In*itiative (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	*Founder*, **Penn CIS PhD Mentorship Program**
Sept 2020–Present	*Co-Chair*, **Computer and Information Science Doctoral Association (CISDA)** Advocate for student interests and liaise with faculty of CIS and Penn Engineering.

Sept 22–May 23	*PhD Rep.,* **Department of Computer and Information Science Office Committee**
Sept 21–May 22	*PhD Rep,* **Penn Engineering Dean's Doctoral Advisory Board**
Sept–Dec 2021	*Co-organizer,* **Penn NLP Computational Linguistics Lunch (CLunch)**
Mar–Oct 2021	**MindCORE *Di*versity and *E*quity *In*itiative (DivE In)**

MindCORE *Di*versity and *E*quity *In*itiative (DivE In)
Programming Development Committee Lead, Steering Committee Member
Collaborate across departments to establish inaugural DivE In, a fully funded weekend of workshops for underrepresented undergraduates in the mind sciences.