

Alyssa Hwang

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Modified: September 2, 2025

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

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

Industry Experience

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| Summer 2022 | AWS Comprehend (Applied Scientist Intern) – New York, NY |
| | <i>NewsQs: 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*

- 2025 **Interactive Figure-Text Integration at Document Scale**
Alyssa Hwang, Hita Kambhamettu, Yue Yang, Ajay Patel,
Joseph Chee Chang, Andrew Head.
In preparation.
- 2025 **Attribution Gradients: Citation Sensemaking of Attributed AI Answers
with Incrementally Unfoldable Context**
Hita Kambhamettu, **Alyssa Hwang**, Philippe Laban, Andrew Head.
In preparation.
- 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!**
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: [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
Instructor: [Michael Collins](#) (Columbia University)
- Spring 2019

Fall 2019 **Teaching Assistant**, COMS 4705 Natural Language Processing
Instructor: [Kathleen McKeown](#) (Columbia University)

Mentoring

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 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 *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 Diversity and Equity Initiative (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.