

Lin Ai

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Education

Ph.D.	Columbia University Computer Science, Natural Language Processing Advisor: Prof. Julia Hirschberg 🔗	Sep 2020 – Aug 2025 (Expected)
M.Sc.	Columbia University Computer Science with Machine Learning Focus	Sep 2018 – Feb 2020
B.Math	University of Waterloo Computer Science, Statistics, Actuarial Science (Triple Major) Graduated with Distinction, multiple Dean's Honor List recognitions.	Sep 2013 – Apr 2018
Exchange	École Polytechnique Fédérale de Lausanne Computer Science	Feb 2016 – Jul 2016

Research Area

Past & Ongoing Efforts: Natural Language Processing, Information Disorder, Social Networks, Spoken Language Processing

Broader Interests & Current Focus: LLM Safety and Alignment, Responsible/Ethical AI, AI for Science/Health

Professional Experience

JP Morgan Chase, AI/ML Data Associate Research Intern (ML Team led by Dr. Lidia Mangu 🔗)	New York, NY Jun 2024 - Aug 2024
<ul style="list-style-type: none">Engineered an LLM-powered automated evaluation framework for document-level novelty, leveraging atomicity scores and information salience to enhance interpretability and align closely with human judgment.Developed a patent-pending innovation, currently under review.	
Meta, Research Scientist Intern (Multimodal Team led by Dr. Florian Metze 🔗)	New York, NY May 2022 - Sep 2022
<ul style="list-style-type: none">Built a multimodal sentiment classification model with optimized unimodal representation learning, achieving performance on par with state-of-the-art models.Designed and implemented a multimodal BYOL framework for self-supervised training, significantly enhancing cross-domain data representation and adaptation.	
Electronic Arts, Software Engineer Intern	Vancouver, Canada Sep 2017 - Dec 2017
<ul style="list-style-type: none">Engineered a real-time connection pipeline between external editors and FrostEd, enabling seamless database and UI synchronization.Built and integrated a language server for an internal scripting language in VS Code, enhancing run-time communication with FrostEd.	
Microsoft, Software Engineer Intern	Tokyo, Japan Jan 2017 - Apr 2017
<ul style="list-style-type: none">Developed and launched new features for Office Lens, enabling multi-shot functionality and batch uploads, rolled out globally in August 2017.Optimized telemetry endpoints to improve user insights and streamline project management.	

Research Experience

Columbia University Ph.D. Candidate	New York, NY Sep 2018 - Present
<ul style="list-style-type: none">Led multiple DARPA and AFOSR-funded projects on information disorder, including misinformation detection, malicious intent identification, radicalization analysis, and cyberattack defense.Advanced LLM safety and integrity by improving LLM generation and addressing misuse.	
Graduate Research Assistant (Advisor: Prof. Julia Hirschberg 🔗)	
<ul style="list-style-type: none">Contributed to multiple DARPA-funded multimodal paralinguistic projects, including sentiment and humor detection in videos, speech emotion conversion, and speech accent conversion.	
University of Waterloo Undergraduate Research Assistant (Advisor: Prof. Pascal Poupart 🔗)	Waterloo, Canada May 2017 - Apr 2018
<ul style="list-style-type: none">Designed and implemented an RNN-based chatbot with efficient chat history retrieval.Developed emotion and stress detection models using time-series data from wearable devices.	

Publications

- [1] **Enhancing Pre-Trained Generative Language Models with Question Attended Span Extraction on Machine Reading Comprehension** [Paper](#) [Code](#)
L. Ai, Z. Hui, Z. Liu, J. Hirschberg
The 2024 Conference on Empirical Methods in Natural Language Processing (*EMNLP'24*)
- [2] **Defending Against Social Engineering Attacks in the Age of LLMs** [Paper](#) [Code](#)
L. Ai*, T. Kumarage*, A. Bhattacharjee*, Z. Liu, Z. Hui, M. Davinroy, J. Cook, L. Cassani, K. Trapeznikov, M. Kirchner, A. Basharat, A. Hoogs, J. Garland, H. Liu, J. Hirschberg
The 2024 Conference on Empirical Methods in Natural Language Processing (*EMNLP'24*)
- [3] **A Survey on Open Information Extraction from Rule-based Model to Large Language Model** [Paper](#)
P. Liu*, W. Gao*, W. Dong*, **L. Ai***, Z. Gong*, S. Huang, Z. Li, E. Hoque, J. Hirschberg, Y. Zhang
The 2024 Conference on Empirical Methods in Natural Language Processing (*EMNLP'24 Findings*)
- [4] **NovAScore: A New Automated Metric for Evaluating Document Level Novelty** [Paper](#)
L. Ai, Z. Gong, H. Deshpande, A. Johnson, E. Phung, A. Emami, J. Hirschberg
The 31st International Conference on Computational Linguistics (*COLING'25 Submission*)
- [5] **Propalnsight: Toward Deeper Understanding of Propaganda in Terms of Techniques, Appeals, and Intent**
J. Liu*, **L. Ai***, Z. Liu, P. Karisani, Z. Hui, M. Fung, P. Nakov, J. Hirschberg, H. Ji
The 31st International Conference on Computational Linguistics (*COLING'25 Submission*)
- [6] **CREAM: Comparison-Based Reference-Free ELO-Ranked Automatic Evaluation for Meeting Summarization** [Paper](#)
Z. Gong, **L. Ai**, H. Deshpande, A. Johnson, E. Phung, Z. Wu, A. Emami, J. Hirschberg
The 31st International Conference on Computational Linguistics (*COLING'25 Submission*)
- [7] **TweetIntent@Crisis: A Dataset Revealing Narratives of Both Sides in the Russia-Ukraine Crisis** [Paper](#)
L. Ai, S. Gupta, S. Oak, Z. Hui, Z. Liu, J. Hirschberg
The 18th International AAAI Conference on Web and Social Media (*ICWSM'24*)
- [8] **Beyond Silent Letters: Amplifying LLMs in Emotion Recognition with Vocal Nuances** [Paper](#)
Z. Wu, Z. Gong, **L. Ai**, P. Shi, K. Donbekci, J. Hirschberg
arXiv preprint: 2407.21315, 2024
- [9] **Combating the COVID-19 Infodemic: Untrustworthy Tweet Classification using Heterogeneous Graph Transformer** [Paper](#) [Code](#)
L. Ai, Z. Liu, J. Hirschberg
The 17th International AAAI Conference on Web and Social Media (*ICWSM'23*)
- [10] **What Makes A Video Radicalizing? Identifying Sources of Influence in QAnon Videos** [Paper](#)
L. Ai, Y. Chen, Y. Yu, S. Kweon, J. Hirschberg, S. I. Levitan
The 9th International Conference on Computational Social Science (*IC²S²'23*)
- [11] **Identifying the Popularity and Persuasiveness of Right- and Left-Leaning Group Videos on Social Media** [Paper](#)
L. Ai, A. Kathuria, S. Panda, A. Sahai, Y. Yu, S. I. Levitan, J. Hirschberg
2021 IEEE International Conference on Big Data (*IEEE BigData'21*)
- [12] **Exploring New Methods for Identifying False Information and the Intent Behind It on Social Media: COVID-19 Tweets** [Paper](#)
L. Ai, R. Chen, Z. Gong, J. Guo, S. Hooshmand, Z. Yang, J. Hirschberg
The 15th International AAAI Conference on Web and Social Media (*ICWSM'21*)
- [13] **A New Approach to Accent Recognition and Conversion for Mandarin Chinese** [Paper](#)
L. Ai, S. Jeng, H. Beigi
arXiv preprint: 2008.03359, 2020
- [14] **Multimodal Indicators of Humor in Videos** [Paper](#)
Z. Yang, **L. Ai**, J. Hirschberg
The 2019 IEEE Conference on Multimedia Information Processing and Retrieval (*IEEE MIPR'19*)

Entrepreneurial Experience

Have You Met (Startup), *Chief AI Lead*

- Leading the AI/ML development for an LLM-powered next-generation dating app, driving innovation and preparing for product launch in October 2024.

New York, NY
Jul 2023 - Present