

Faceia (Xinmeng) Hou

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Education

Columbia University	New York, NY
Master of Arts, Major in Applied Linguistics	09/2022 - 05/2024
University of California, Los Angeles (UCLA)	Los Angeles, CA
Bachelor of Arts, Major in Philosophy & Minor in Linguistics	09/2019 - 09/2021
Santa Barbara City College	Santa Barbara, CA
Major in Philosophy, Transferred to UCLA	01/2018 - 06/2019

Research Interests

AI for Education, Data Mining, NLP, LLM, AI for Social Good and other AI applications.

Publications

- [1] **X. Hou**, Z. Cao. “Dual Dynamic Perspective with Contrastive Learning for Robust Temporal Knowledge Graph Completion,” to be submitted to *ACM SIGKDD on Knowledge Discovery and Data Mining Conference (KDD 2025)*.
- [2] **X. Hou**, R. Ni, Y. Wu, & N. Hoa. “Multi-Agent Language Instruction: A Pedagogical Benchmarking Framework,” to be submitted to upcoming *ACL Rolling Review*.
- [3] **X. Hou**, L. Fu, C. Meng, & H. Hu. “Train Once for All: A Transitional Approach for Efficient Aspect Sentiment Triplet Extraction.” *submitted to Transactions of the Association for Computational Linguistics (TACL)*. [\[link\]](#) (Under Review)
- [4] **X. Hou**. “Mitigating biases to embrace diversity: A comprehensive annotation benchmark for toxic language,” in the *4th International Conference on Natural Language Processing for Digital Humanities, (EMNLP-NLP4DH 2024)*. [\[link\]](#)
- [5] N. Deas, J. A. Grieser, **X. Hou**, S. Kleiner, T. Martin, S. Nandanampati, D. U. Patton, & K. McKeown. “PhonATe: Impact of type-written phonological features of African American language on generative language modeling tasks,” in the *Conference on Language Modeling (COLM 2024)*. [\[link\]](#)
- [6] **X. Hou**. “LanPIP: A specialized LLM-empowered pipeline for customizable language learning,” presented at the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining - AI for Education (**KDD-AI4EDU 2024**), Barcelona, Spain, Aug. 26, 2024. [\[link\]](#)
- [7] W. Wang, H. Min, X. Wu, **X. Hou**, Y. Li, and X. Zhao, “High accuracy and low complexity lidar place recognition using unitary invariant Frobenius norm,” *IEEE Sensors Journal*, vol. 23, no. 11, pp. 11205–11217, Nov. 2022, doi: 10.1109/jsen.2022.3221979. [\[link\]](#)
- [8] **X. Hou**, “Leveraging syntactic structures in natural language processing,” *the 3rd International Academic Exchange Conference on Science and Technology Innovation (IAECST 2021)*. [\[link\]](#)
- [9] **X. Hou**, “A narrow study on two forms of WH-Question concerning the scope ambiguity,” *Advances in Social Science, Education and Humanities Research, proceedings of the 2021 4th International Conference on Humanities Education and Social Sciences (ICHESS 2021)*. [\[link\]](#)

Speaker on Conferences

- [1] **X. Hou**, Y. Zhang, H. Yu. “Conversational AI for learning English: A systematic review and future directions,” presented at the Computer-Assisted Language Instruction Consortium (**CALICO’24**), CMU, Pittsburgh, PA, USA, May 24, 2024. [\[link\]](#)
- [2] **X. Hou**. “A low time complexity approach for pair-directed sentiment analysis,” the 1st Artificial Intelligence Research in Applied Linguistics Conference (**AIRIAL’23**), New York, NY, USA, Sep. 29—30, 2023. [\[link\]](#)

Competitions

LLM Prompt Recovery	Top 1%	[code]
Predict Student Performance from Game Play	Top 4.5%	[code]

Research & Projects

- [1] **Researcher** 10/2024 - present
Computational Linguistics lab @ Shanghai Jiao Tong University | Advisor: [Hai Hu](#) Shanghai, China
[NLP] NLP Research on Language Usage
- Developed an entity extraction method using transition actions with linear time complexity.
 - Conducted experiments on aspect-based sentiment analysis tasks involving transitional action prediction.
 - Working on a persuasive idiomatic translation evaluation framework for assessing idiom translation.
- [2] **Researcher** 09/2024 - present
SJTU Multimedia Lab @ Shanghai Jiao Tong University | Advisor: [Xiaohong Liu](#) Zhejiang, China
[Digital Humanities] Textile Vision | Funded by Eastyle Textile Group
- Implemented pattern-based restoration for single-layer textile manufacturing.
 - Training a Multimedia Model as one step solution for textile production.
 - (pending) Performing 3D reconstruction of ancient multi-layer textile for museology demonstration
- [3] **Researcher & Developer** 06/2024 - present
Apex Lab @ Shanghai Jiao Tong University | Advisors: [Weinan Zhang](#) & [Jun Wang](#) Shanghai, China
[LLM Reasoning] Open R: Advanced Reasoning with Large Language Models
- Constructed LLM agent backbones for code reasoning task.
 - Developed coding data and established annotation criteria for code reasoning benchmarking.
 - Enhanced probabilistic roadmap method (PRM) training and search algorithms.
- [4] **Team Lead** 06/2024 - present
Apex Lab @ Shanghai Jiao Tong University | Advisors: [Weinan Zhang](#) & [Yong Yu](#) Shanghai, China
[LLM Agent in EDU] CodeMate & AI-powered Higher Education
CodeMate is now recognized by Ministry of Education of China in the second batch of **Typical Case of "AI + Higher Education" Application Scenarios** as a part of Shanghai Jiao Tong University's proposal! [\[Link to Official Announcement\]](#)
- Developed [CodeMate](#), an AI tutoring platform based on task-based teaching (TBT).
 - Conducted experiments with over 1,500 SJTU undergraduate students enrolled in introductory C++ programming courses during the Fall 2024 semester.
 - Researched habitual learning patterns for AI-assisted instruction to improve CodeMate for wider implementation.
- [5] **Researcher**, Honda & Chang'an University | Advisor: [Xiangmo Zhao](#) 04/2020 - present
[Multi-Media] Vision Navigation Hybrid
- Implemented multi-modal model for driving Q&A and loop recognition.
 - Benchmarked Lidar, visual, and text three media dataset.
 - Composed research papers and delivered TRB presentations.
- [6] **Researcher** 09/2023 - 05/2024
NLP Lab @ Columbia University | Mentor: [Kathleen McKeown](#) New York, NY
[NLP & Ethical AI] Mitigating Bias in Minority Languages
- Applied phonological augmentation for AAE, reducing unwanted augmentations.
 - Conducted an emotion classification study on grief among minorities
- [7] **Researcher** 10/2023 - 05/2024
AL-TESOL LT Research Group @ Columbia University | Advisors: [Nguyen Hoa](#) & [Erik Voss](#) New York, NY
[AI & EDU] AI & Language Education
- Developed an auto-assessment tool for CLP writing evaluation
 - Conducted a systematic review of conventional AI in language learning
 - Developed a corpus using ASR for L2 learners

Teaching Experience

- [1] **CLP Instructor** 01/2024 - 04/2024
Teachers College, Columbia University New York, NY
- Researched advanced instructional approaches for language instruction in the CLP curriculum
 - Implemented innovative language learning strategies to enhance student engagement and comprehension
- [2] **Tutor of Computational Linguistics** 09/2023 - 12/2023

Academic Event Organization

[1] <i>Event Management & Demonstrator</i>	AL-TESOL Open House 2023 & 2024	01/2024 - 04/2024
[2] <i>Conference Management & Promoter</i>	ALRiAL Conference, 2023	09/2023 - 12/2023

Academic Event Organization

Languages	English (fluent, GRE 336), Chinese (native), Japanese (advanced, N2), French (intermediate)
Programming	Python, C#, JavaScript, R, HTML
Frameworks	PyTorch, Gradio, Streamlit, TensorFlow, React