

Woojeong Jin

Senior Applied Scientist, Hippocratic AI

woojeong.jin@gmail.com · woojeongjin.github.io

Google Scholar · LinkedIn

SUMMARY

I build **real-time voice agents for healthcare** at Hippocratic AI, deployed on 10M+ patient calls. My work spans **speech and audio LLMs**: contextual ASR, ASR error detection and recovery, and end-to-end speech-to-response models. Ph.D. in Computer Science from USC, with **multimodal learning** research on vision-language pre-training and low-resource generalization published at ACL, EMNLP, and TheWebConf.

PROFESSIONAL EXPERIENCE

Senior Applied Scientist, Hippocratic AI

Palo Alto, CA · Jun 2024 – Present

- Built a contextual ASR system on a decoder-only Audio-LLM that conditions on multi-turn dialogue context and personalized user biasing; reduced WER by 50% on medical-domain speech and component errors by 85% on average on production calls.
- Trained an end-to-end speech-to-response model (400B+ parameters) that integrates speech understanding with LLM reasoning for low-latency voice interaction.
- Co-author of the technical report [T1] and of HARP, an agentic retrieval framework for long-form audio analysis [C13, *IEEE SLT 2026*]; inventor on 1 granted U.S. patent and 2 published U.S. patent applications on real-time ASR and conversational AI.

Research Intern, Microsoft Research

Redmond, WA · Jan 2022 – Apr 2022

- Developed GRILL, a grounded vision-language pre-training method that aligns text spans with image regions, enabling zero-shot transfer across 5 downstream tasks [P1].

Mentors: Subhabrata Mukherjee, Yu Cheng, Yelong Shen, and Ahmed H. Awadallah

Research Intern, Microsoft Azure AI

Redmond, WA · Jun 2021 – Jan 2022

- Proposed FewVLM, a prompt-based method for low-resource vision-language learning that matches the zero-/few-shot performance of models up to $246\times$ larger [C10, *ACL 2022*].

Mentors: Yu Cheng, Yelong Shen, and Weizhu Chen

Research Intern, Meta AI

Menlo Park, CA · May 2020 – Aug 2020

- Developed saliency-aware knowledge distillation for multimodal understanding (MSD), analyzing how each modality contributes to distilled-model performance [C8, *Findings of EMNLP 2021*].

Mentors: Hamed Firooz and Maziar Sanjabi

Research Assistant, University of Southern California

Los Angeles, CA · Aug 2018 – May 2024

- Led first-author research on multimodal few-shot learning [C10, P1], cross-modal knowledge transfer [C9], and temporal reasoning and event forecasting [C6, C7]; contributed to structured relational inference [C3–C5].

EDUCATION

Ph.D. in Computer Science, University of Southern California

Los Angeles, CA · Aug 2018 – May 2024

- Dissertation: *Bridging the Visual Reasoning Gaps in Multi-modal Models*
- Advisor: Xiang Ren

B.S. in Electrical and Computer Engineering, Seoul National University

Seoul, Korea · Feb 2017

AWARDS & HONORS

- Kwanjeong Educational Foundation Scholarship 2018 – 2023
- USC Annenberg Graduate Fellowship 2018 – 2023
- Merit-based Scholarship, Seoul National University 2014, 2015, 2016

PATENTS

UNITED STATES

- **Real-time Use of Multiple Parallel Automatic Speech Recognition (ASR) Modules in a Conversational Artificial Intelligence (AI) Architecture.** With S. Mukherjee, S. Puri, T. Laud, and J. Schellenberger. U.S. Patent 12,597,512 B2, granted Apr 2026.
- **Conversational Artificial Intelligence System with Contextual Speech Recognition, Domain Vocabulary, and Evaluation Model.** U.S. Patent Application Pub. [US 2026/0213004 A1](#), published Jul 2026 (continuation of U.S. Patent 12,597,512).
- **Dynamic Persona Switching in a Conversational Artificial Intelligence (AI) Based Agent Based on Conversation Attributes.** With K. Aggarwal, S. Mukherjee, S. Puri, T. Laud, and J. Schellenberger. U.S. Patent Application Pub. [US 2026/0321406 A1](#), published Oct 2026.

KOREA

- **Method and Apparatus for Providing Supervised and Extended Restart in Random Walks for Ranking and Link Prediction in Networks.** With J. Jung and U Kang. KR Patent 10-2048442, registered Nov 2019.
- **Method for Personalized Ranking in Signed Networks, Recording Medium and Device for Performing the Method.** With J. Jung and U Kang. KR Patent 10-1866866, registered Jun 2018.

PUBLICATIONS

13 conference papers, 4 journal articles, 2 preprints, and 1 technical report; first author on 8.

* denotes equal contribution.

TECHNICAL REPORT

- [T1] S. Mukherjee, M. Sanz Ausin, K. Aggarwal, D. Datta, S. Puri, **Woojeong Jin**, et al. (26 authors). Perfecting Human-AI Interaction at Clinical Scale: Turning Production Signals into Safer, More Human Conversations. *Technical report*, Jan 2026. Contextual ASR with Audio-LLM, single-word correction, and targeted clarification for voice agents deployed on 10M+ patient calls.

PREPRINTS

- [P2] **Woojeong Jin**, T. Srinivasan, J. Thomason, and X. Ren. WinoViz: Probing Visual Properties of Objects Under Different States. *arXiv:2402.13584*, 2024.
- [P1] **Woojeong Jin**, S. Mukherjee, Y. Cheng, Y. Shen, W. Chen, A. H. Awadallah, D. Jose, and X. Ren. GRILL: Grounded Vision-language Pre-training via Aligning Text and Image Regions. *arXiv:2305.14676*, 2023.

REFEREED CONFERENCE PAPERS

- [C13] C.-J. Li, M. Someki, **Woojeong Jin**, Y. M. Siriwardena, T. Laud, S. Puri, and S. Watanabe. HARP: Agentic Hybrid Retrieval and Analysis for Long-Form Audio. *IEEE SLT 2026*. *arXiv:2609.14116*.
- [C12] D.-H. Lee, K. Ahrabian, **Woojeong Jin**, F. Morstatter, and J. Pujara. Temporal Knowledge Graph Forecasting Without Knowledge Using In-Context Learning. *EMNLP 2023*.
- [C11] J. Moon*, D.-H. Lee*, H. J. Cho, **Woojeong Jin**, C. Y. Park, M. Kim, J. Pujara, and S. Park. Analyzing Norm Violations in Real-Time Live-Streaming Chat. *EMNLP 2023*. Earlier version at *NLP+CSS@EMNLP 2022*.
- [C10] **Woojeong Jin**, Y. Cheng, Y. Shen, W. Chen, and X. Ren. A Good Prompt Is Worth Millions of Parameters: Low-resource Prompt-based Learning for Vision-Language Models. *ACL 2022*. Also at *MML@ACL 2022*.
- [C9] **Woojeong Jin***, D.-H. Lee*, C. Zhu, J. Pujara, and X. Ren. Leveraging Visual Knowledge in Language Tasks: An Empirical Study on Intermediate Pre-training for Cross-Modal Knowledge Transfer. *ACL 2022*.

- [C8] **Woojeong Jin**, M. Sanjabi, S. Nie, L. Tan, X. Ren, and H. Firooz. MSD: Saliency-aware Knowledge Distillation for Multimodal Understanding. *Findings of EMNLP 2021*. Earlier version (Modality-specific Distillation) at *MAI@NAACL 2021*.
- [C7] **Woojeong Jin**, R. Khanna, S. Kim, D.-H. Lee, F. Morstatter, A. Galstyan, and X. Ren. ForecastQA: A Question Answering Challenge for Event Forecasting with Temporal Text Data. *ACL 2021*.
- [C6] **Woojeong Jin**, M. Qu, X. Jin, and X. Ren. Recurrent Event Network: Autoregressive Structure Inference over Temporal Knowledge Graphs. *EMNLP 2020*. Earlier version at *ICLR-RLGM 2019*.
- [C5] S. Garg*, N. Sharma*, **Woojeong Jin**, and X. Ren. Temporal Attribute Prediction via Joint Modeling of Multi-Relational Structure Evolution. *IJCAI 2020*.
- [C4] C. Fu, T. Chen, M. Qu, **Woojeong Jin**, and X. Ren. Collaborative Policy Learning for Open Knowledge Graph Reasoning. *EMNLP 2019*.
- [C3] W. Ma, M. Zhang, Y. Cao, **Woojeong Jin**, C. Wang, Y. Liu, S. Ma, and X. Ren. Jointly Learning Explainable Rules for Recommendation with Knowledge Graph. *TheWebConf 2019*.
- [C2] M. Yoon, **Woojeong Jin**, and U Kang. Fast and Accurate Random Walk with Restart on Dynamic Graphs with Guarantees. *TheWebConf 2018*.
- [C1] J. Jung, **Woojeong Jin**, L. Sael, and U Kang. Personalized Ranking in Signed Networks using Signed Random Walk with Restart. *ICDM 2016*.

REFEREED JOURNAL PAPERS

- [J4] D. M. Benjamin, F. Morstatter, A. E. Abbas, ..., **Woojeong Jin**, ..., M. D. Ward, and A. Galstyan (29 authors). Hybrid Forecasting of Geopolitical Events. *AI Magazine*, 2023.
- [J3] J. Jung, **Woojeong Jin**, H.-M. Park, and U Kang. Accurate Relational Reasoning in Edge-labeled Graphs by Multi-labeled Random Walk with Restart. *World Wide Web Journal*, 2020.
- [J2] **Woojeong Jin**, J. Jung, and U Kang. Supervised and Extended Restart in Random Walks for Ranking and Link Prediction in Networks. *PLOS ONE*, 2019.
- [J1] J. Jung, **Woojeong Jin**, and U Kang. Random Walk Based Ranking in Signed Social Networks: Model and Algorithms. *Knowledge and Information Systems (KAIS)*, 2019.

PROFESSIONAL SERVICE

- Reviewer: NeurIPS, EMNLP, KDD, WSDM, CoNLL, AKBC, CVPR Workshops