

Jiawen Kang

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ERB 503
The Chinese University of Hong Kong
Shatin, N.T.
Hong Kong SAR

PARTICULARS

EDUCATION

The Chinese University of Hong Kong
Ph. D. in Information System

Hong Kong SAR, China
Sep. 2021 - Now

Jilin University
B. Eng. in Electrical Engineering

Changchun, China
Sep. 2015 - Jul. 2019

RESEARCH INTERESTS

I am extensively interested in modeling speech and natural languages, including speech/speaker recognition, speech/text classification, and conversational human-computer interaction. Currently, my work focuses on understanding clinical conversations (using both speech & text).

RESEARCH HIGHLIGHTS

- My co-first authored work received the ISCA Award for the Best Paper Published in Speech Communication (2019-2023). Title: "CN-Celeb: multi-genre speaker recognition"
- My conference paper "CN-Celeb: a challenging Chinese speaker recognition dataset" is on the list of [Google Scholar Metrics 2024](#).
- I published 26 papers in top speech conferences/journals, including 7 first-author works and 9 second-author works.
- I have extensive research and development experience in speech and neural language processing, including speech/speaker recognition, conversational diagnostics, speech generation, and human-computer interaction.

EXPERIENCES

The Chinese University of Hong Kong
Research Assistant, Advisor: [Prof. Helen Meng](#)

Nov. 2020 - Jul. 2021

- Human-computer interaction for spoken dialogue agents
- Semi-auto transcription using speaker diarization and speech recognition

Tsinghua University
Research Assistant, CSLT, Advisor: [Prof. Dong Wang](#)

Sep. 2019 - Oct. 2020

- Robust speaker recognition

Jilin University

Nov. 2017 - Nov. 2018

Research Intern, College of Instrumentation and Electrical Engineering

- Signal processing algorithms for fiber-optical sensing
- Tunable diode laser absorption spectroscopy

PROJECTS

- **Research Grants Council (UGC) Theme-Based Research (T45-407/19N)** *Sep. 2021 - Now*
Main Contributor
 Extracting and identifying spoken language biomarkers for neurocognitive disorders
- **Talktive: a Conversational Agent Using Backchannels to Engage Elderly in Speaking, The Chinese University of Hong Kong** *Nov. 2020 - Aug. 2021*
Main Contributor
 Developed a spoken conversational agent featuring backchanneling and evaluated it through user studies
- **Cross-Devices Speaker Recognition, Tsinghua University** *Dec. 2019 - Sep. 2020*
Main contributor
 Investigated solutions of the statistical mismatch problem in cross-device speaker recognition
- **CN-Celeb: Multi-Genre Speaker Recognition, Tsinghua University** *Sep. 2019 - Nov. 2020*
Main contributor
 Collected web-scale speaker recognition corpus and conducted studies on robust speaker recognition algorithms
- **Chinese Speech Synthesis, Jilin University** *Jan. 2019 - Apr. 2020*
Individual final-year project
 Developed a Chinese text-to-speech PC software with a front-end GUI and back-end text-to-speech model
- **Optical Fiber Methane Gas Sensor, Jilin University** *May. 2017 - Apr. 2018*
Team Leader
 Developed a gas sensor based on tunable diode laser absorption spectroscopy, and investigated state-of-the-art signal processing algorithms for optical sensors
- **High-speed Time-interleaved ADCs based on FPGA, Jilin University** *Jul. 2017 - Aug. 2018*
Individual summer project
 Proposed a distributed read/write algorithm for ADCs on FPGA chips

AWARDS AND HONORS

- IEEE Ganesh N. Ramaswamy Memorial Student Grant 2025
- ISCA Award for the Best Paper Published in Speech Communication (2019-2023) 2024
- Most Cited Article of Speech Communication 2022
- The Chinese University of Hong Kong Postgraduate Studentship 2021
- Jilin University Scholarship 2018
- Jilin University Individual Scholarship 2017

CHALLENGE

- **Ranked 2/14**, 2022 ICASSP M2MeT challenge Track 1

OPEN SOURCE

- Code - Speaker-aware CTC
Link: <https://github.com/kjw11/Speaker-Aware-CTC>
- Code - Cross-speaker network
Link: <https://github.com/kjw11/CSEnet-ASR>
- Corpus - CN-Celeb1 & CN-Celeb2
Link: <https://openslr.org/82>
- Code - RobustMAML
Link: <https://github.com/kjw11/MAML-Speaker>
- Code - Kaldi speaker recognition recipe
Link: <https://github.com/kaldi-asr/kaldi/tree/master/egs/cnceleb>

TEACHING

- Teaching assistant, SEEM2460 Introduction to Data Science, The Chinese University of Hong Kong (2024-2025 Term 2, 2023-2024 Term 2, 2022-2023 Term 2, 2021-2022 Term 2)
- Teaching assistant, ENGG2780 Statistics for Engineers, The Chinese University of Hong Kong (2022-2023 Term 2, 2021-2022 Term 2)
- Undergraduate Student Mentor, Department of SEEM, The Chinese University of Hong Kong (2024-2025 Term 1)

PATENT

- Method and System for Text-To-Speech Hong Kong Short-Term Patent

PAPERS

FIRST-AUTHOR PAPERS

1. **Jiawen Kang**, Dongrui Han, Lingwei Meng, Jingyan Zhou, Jinchao Li, Xixin Wu, Helen Meng. "Towards Within-class Variation in Alzheimer's Disease Detection", *Submitted to INTERSPEECH 2025*
2. **Jiawen Kang**, Lingwei Meng, Mingyu Cui, Yuejiao Wang, Xixin Wu, Xunying Liu, Helen Meng. "Disentangling Speakers in Multi-Talker Speech Recognition with Speaker-Aware CTC", *In ICASSP 2025-2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1-5. IEEE, 2025.
3. **Jiawen Kang**, Junan Li, Jinchao Li, Xixin Wu, Helen Meng. "Not All Errors Are Equal: Investigation of Speech Recognition Errors in Alzheimer's Disease Detection", *In 2024 IEEE 14th International Symposium on Chinese Spoken Language Processing (ISCSLP)*, pp. 631-635. IEEE, 2024.

4. **Jiawen Kang**, Lingwei Meng, Mingyu Cui, Haohan Guo, Xixin Wu, Xunying Liu, Helen Meng. "Cross-Speaker Encoding Network for Multi-Talker Speech Recognition." *In ICASSP 2024-2024 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 11986-11990. *IEEE*, 2024.
5. **Jiawen Kang**, Ruiqi Liu, Lantian Li, Yunqi Cai, Dong Wang, Thomas Fang Zheng. "Domain-invariant speaker vector projection by model-agnostic meta-learning." *Proc. Interspeech 2020*, 3825-3829, doi: 10.21437/Interspeech.2020-2562.
6. Lantian Li*, Ruiqi Liu*, **Jiawen Kang***, Yue Fan, Hao Cui, Yunqi Cai, Ravichander Vipperla, Thomas Fang Zheng, Dong Wang. "Cn-celeb: multi-genre speaker recognition." *Speech Communication* 137 (2022): 77-91. (*equal contribution)
7. Jinchao Li*, Yuejiao Wang*, Junan Li*, **Jiawen Kang***, Bo Zheng, Simon Wong, Manwai Mak, Brian Mak, Xixin Wu, Xunying Liu, Helen Meng. "Detecting Neurocognitive Disorders through Analyses of Topic Evolution and Cross-modal Consistency in Visual-Stimulated Narratives", *Submitted to IEEE Journal of Selected Topics in Signal Processing* (*equal contribution)
8. **Jiawen Kang**, Junan Li, Bo Zheng, Jinchao Li, Yi Wang, Xixin Wu, Helen Meng. "Comparative Analysis of Neurocognitive Disorder-Related Biomarkers Across Distinct Spoken Cognitive Tasks". *Unpublished*

NON-FIRST-AUTHOR PAPERS

9. Lingwei Meng, **Jiawen Kang**, Yuejiao Wang, Zengrui Jin, Xixin Wu, Xunying Liu, Helen Meng. "Empowering whisper as a joint multi-talker and target-talker speech recognition system", *Proc. Interspeech 2024*, 4653-4657, doi: 10.21437/Interspeech.2024-971
10. Mingyu Cui, **Jiawen Kang**, Jiajun Deng, Xi Yin, Yutao Xie, Xie Chen, Xunying Liu. "Towards Effective and Compact Contextual Representation for Conformer Transducer Speech Recognition Systems." *Proc. INTERSPEECH 2023*, 2223-2227, doi: 10.21437/Interspeech.2023-552.
11. Lingwei Meng, **Jiawen Kang**, Mingyu Cui, Haibin Wu, Xixin Wu, Helen Meng. "Unified Modeling of Multi-Talker Overlapped Speech Recognition and Diarization with a Sidecar Separator." *Proc. INTERSPEECH 2023*, 3467-3471, doi: 10.21437/Interspeech.2023-1422.
12. Lingwei Meng, **Jiawen Kang**, Mingyu Cui, Yuejiao Wang, Xixin Wu, Helen Meng. "A Sidecar Separator Can Convert A Single-Talker Speech Recognition System to A Multi-Talker One." *In ICASSP 2023-2023 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1-5. *IEEE*, 2023.
13. Haibin Wu, **Jiawen Kang**, Lingwei Meng, Helen Meng, Hung-yi Lee. "The defender's perspective on automatic speaker verification: An overview." *In IJCAI 2023 DADA Workshop*.
14. Haibin Wu, **Jiawen Kang**, Lingwei Meng, Yang Zhang, Xixin Wu, Zhiyong Wu, Hung-yi Lee, Helen Meng. "Tackling spoofing-aware speaker verification with multi-model fusion." *Proc. The Speaker and Language Recognition Workshop (Odyssey 2022)*, 92-99, doi: 10.21437/Odyssey.2022-13.

15. Zijian Ding, **Jiawen Kang**, Tinky Oi Ting Ho, Ka Ho Wong, Helene H Fung, Helen Meng, Xiaojuan Ma. "TalkTive: a conversational agent using backchannels to engage older adults in neurocognitive disorders screening." *In Proceedings of the 2022 CHI conference on human factors in computing systems*, pp. 1-19. 2022.
16. Yue Fan, **Jiawen Kang**, Lantian Li, KC Li, HL Chen, ST Cheng, PY Zhang, ZY Zhou, YQ Cai, Dong Wang. "Cn-celeb: a challenging chinese speaker recognition dataset." *In ICASSP 2020-2020 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 7604-7608. IEEE, 2020.
17. Tianyu Zhang, **Jiawen Kang**, Dezhuang Meng, Hongwei Wang, Zhengming Mu, Meng Zhou, Xiaotong Zhang, Chen Chen. "Mathematical Methods and Algorithms for Improving Near-Infrared Tunable Diode-Laser Absorption Spectroscopy." *Sensors* 18, no. 12 (2018): 4295.
18. Lantian Li, Dong Wang, **Jiawen Kang**, Renyu Wang, Jing Wu, Zhendong Gao, Xiao Chen. "A principle solution for enroll-test mismatch in speaker recognition." *IEEE/ACM Transactions on Audio, Speech, and Language Processing* 30 (2022): 443-455.
19. Haohan Guo, Fenglong Xie, **Jiawen Kang**, Yujia Xiao, Xixin Wu, Helen Meng. "QS-TTS: Towards Semi-Supervised Text-to-Speech Synthesis via Vector-Quantized Self-Supervised Speech Representation Learning." *IEEE/ACM Transactions on Audio, Speech, and Language Processing* (2024).
20. Lingwei Meng, Shujie Hu, **Jiawen Kang**, Zhaoqing Li, Yuejiao Wang, Wenxuan Wu, Xixin Wu, Xunying Liu, Helen Meng. "Large Language Model Can Transcribe Speech in Multi-Talker Scenarios with Versatile Instructions", *In ICASSP 2025-2025 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 1-5. IEEE, 2025.
21. Dongrui Han, Mingyu Cui, **Jiawen Kang**, Xixin Wu, Xunying Liu, Helen Meng. "Improving Grapheme-to-Phoneme Conversion through In-Context Knowledge Retrieval with Large Language Models", *In 2024 IEEE 14th International Symposium on Chinese Spoken Language Processing (ISCSLP)*, pp. 631-635. IEEE, 2024.
22. Haibin Wu, Lingwei Meng, **Jiawen Kang**, Jinchao Li, Xu Li, Xixin Wu, Hung-yi Lee, Helen Meng. "Spoofing-Aware Speaker Verification by Multi-Level Fusion." *Proc. Interspeech 2022*, 4357-4361, doi: 10.21437/Interspeech.2022-920.
23. Lantian Li, Yang Zhang, **Jiawen Kang**, Thomas Fang Zheng, Dong Wang. "Squeezing value of cross-domain labels: A decoupled scoring approach for speaker verification." *In ICASSP 2021-2021 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 5829-5833. IEEE, 2021.
24. Jingyan Zhou, Kun Li, Junan Li, **Jiawen Kang**, Minda Hu, Xixin Wu, Helen Meng. "Purple-teaming LLMs with Adversarial Defender Training." *Submitted to Transactions of the Association for Computational Linguistics*.
25. Mingyu Cui, Yifan Yang, Jiajun Deng, **Jiawen Kang**, Shujie Hu, Tianzi Wang, Zhaoqing Li, Shiliang Zhang, Xie Chen, Xunying Liu. "Exploring SSL Discrete Speech Features for Zipformer-based Contextual ASR", *Submitted to INTERSPEECH 2025*

26. Naijun Zheng, Na Li, Xixin Wu, Lingwei Meng, **Jiawen Kang**, Haibin Wu, Chao Weng, Dan Su, Helen Meng. "The cuhk-tencent speaker diarization system for the icassp 2022 multi-channel multi-party meeting transcription challenge." *In ICASSP 2022-2022 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*, pp. 9161-9165. IEEE, 2022.
27. Helen Meng, Brian Mak, Man-Wai Mak, Helene Fung, Xianmin Gong, Timothy Kwok, Xunying Liu, Vincent Mok, Patrick Wong, Jean Woo, Xixin Wu, Ka Ho Wong, Sean Shensheng Xu, Naijun Zheng, Ranzo Huang, **Jiawen Kang**, Xiaoquan Ke, Junan Li, Jinchao Li, Yi Wang. "Integrated and enhanced pipeline system to support spoken language analytics for screening neurocognitive disorders." *Proc. INTERSPEECH 2023*, 1713-1717, doi: 10.21437/Interspeech.2023-2249. (📎presenter)