ZIWEI (SARA) GONG

Tel: 929-217-8112 ⋄ Email: zg2272@columbia.edu ⋄ ziweig.github.io/ziweigong/

EDUCATION

Columbia University   *August 2022 - Present*
Ph.D. in Computer Science, **Direction:** NLP; Multimodality   Overall GPA: 4.04/4
Barnard College, Columbia University   *September 2017 - December 2021*
Bachelor of Arts, **Majors:** Computer Science; Psychology   Overall GPA: 3.66/4

PUBLICATION

[1] "SMARTMiner: Extracting and Evaluating SMART Goals from Low-Resource Health Coaching Notes", Iva Bojic, Qi Chwen Ong, Stephanie Hilary Xinyi Ma, Lin Ai, Zheng Liu, **Ziwei Gong**, Julia Hirschberg, Andy Hau Yan HO, Andy W. H. Khong. Accpted at EMNLP 2025 (Findings). Suzhou, China.

[2] "Multimodal Emotion Recognition in Conversations: A Survey of Methods, Trends, Challenges and Prospects", ChengYan Wu, Yiqiang Cai, Yang Liu, Pengxu Zhu, Yun Xue,**Ziwei Gong**, Julia Hirschberg, Bolei Ma. Accpted at EMNLP 2025 (Findings). Suzhou, China.

[3] "Learning More with Less: Self-Supervised Approaches for Low-Resource Speech Emotion Recognition", **Ziwei Gong**, Pengyuan Shi, Kaan Donbekci, Lin Ai, Run Chen, David Sasu, Zehui Wu, Julia Hirschberg. Interspeech 2025. Rotterdam, The Netherlands.

[4] "CREAM: Comparison-Based Reference-Free ELO-Ranked Automatic Evaluation for Meeting Summarization", **Ziwei Gong**, Lin Ai, Harshsaiprasad Deshpande, Alexander Johnson, Emmy Phung, Zehui Wu, Ahmad Emami, Julia Hirschberg. Interspeech 2025. Rotterdam, The Netherlands.

[5] "Pragmatics in the Era of Large Language Models: A Survey on Datasets, Evaluation, Opportunities and Challenges", Bolei Ma, Yuting Li, Wei Zhou, **Ziwei Gong**, Yang Janet Liu, Katja Jasinskaja, Annemarie Friedrich, Julia Hirschberg, Frauke Kreuter, Barbara Plank. ACL 2025. Vienna, Austria.

[6] "Akan Cinematic Emotions (ACE): A Multimodal Multi-party Dataset for Emotion Recognition in Movie Dialogues", David Sasu, Zehui Wu, **Ziwei Gong**, Run Chen, Pengyuan Shi, Lin Ai, Julia Hirschberg, Natalie Schluter.ACL 2025 (Findings). Vienna, Austria.

[7] "Beyond Silent Letters: Amplifying LLMs in Emotion Recognition with Vocal Nuances", Zehui Wu, **Ziwei Gong**, Lin Ai, Pengyuan Shi, Kaan Donbekci, Julia Hirschberg. NAACL 2025. Albuquerque, New Mexico.

[8] "NovAScore: A New Automated Metric for Evaluating Document Level Novelty", Lin Ai, **Ziwei Gong**, Harshsaiprasad Deshpande, Alexander Johnson, Emmy Phung, Ahmad Emami, Julia Hirschberg. COLING 2025. Abu Dhabi, UAE.

[9] "A Survey on Open Information Extraction from Rule-based Model to Large Language Model", Pai Liu*, Wenyang Gao*, Wenjie Dong*, Lin Ai*, **Ziwei Gong***, Songfang Huang, Zongsheng Li, Ehsan Hoque, Julia Hirschberg, Yue Zhang. EMNLP 2024 (Findings). Miami, FL.

[10] "Multimodal Multi-Loss Fusion Network for Sentiment Analysis", Zehui Wu*, **Ziwei Gong***, Jaywon Koo, Julia Hirschberg. NAACL 2024. Mexico City, Mexico.

[11] "A Mapping on Current Classifying Categories of Emotions used in Multimodal Models for Emotion Recognition", **Ziwei Gong**, Xinyi Hu, Muyin Yao, Xiaoning Zhu, Julia Hirschberg. The 18th Linguistic Annotation Workshop, EACL 2024. Malta.

[12] "Eliciting Rich Positive Emotions in Dialogue Generation", **Ziwei Gong**, Qingkai Min and Yue Zhang. First Workshop on Social Influence in Conversations (SICon), ACL 2023. Toronto, Canada.

[13] "Exploring New Methods for Identifying False Information and the Intent Behind It on Social Media: COVID-19 Tweets", Lin Ai, Run Chen, **Ziwei Gong**, Julia Guo, Shayan Hooshmand, Zixiaofan Yang, Julia Hirschberg. Sixth International Workshop on Social Sensing (SocialSens 2021), ICWSM, Atlanta.

<u>Under Review</u>

[14] "Factuality on Demand: Controlling the Factual-Informative Trade-off in Text Generation", **Ziwei Gong***, Yanda Chen*, Julia Hirschberg, Chen Zhao, He He, Zhou Yu, Kathleen Mckeown. 2025, under review.

[15] "The Mind in the Machine: A Survey of Incorporating Psychological Theories in LLMs", Zizhou Liu*, **Ziwei Gong***, Lin Ai*, Zheng Hui*, Run Chen*, Colin Wayne Leach, Michelle R. Greene, Julia Hirschberg. 2025, under review.

PROFESSIONAL EXPERIENCE

JPMorgan Chase & Co   New York, NY
AI & Data Science Summer Associate Program   *June 2024 – August 2024*

· Evaluated and analyzed exsiting automatic evaluations of summarization using LLMs for meetings.
· Proposed a automatic, comparison-based evaluator for long-context summarization that out. This novel framework addresses the unique challenges of evaluating meeting summaries through a combination of chain-of-thought reasoning and key facts alignment to assess model-generated summaries without requiring reference.

AMAZON.COM, INC. (Amazon Web Services)   East Palo Alto, CA, hybrid
Full-time SDE, Deep Learning at AWS   *February 2022 – August 2022*

· Designed, implemented and tested Amazon SageMaker Debugger rules that: automatically optimize ML models training using training metrics in real-time and sending alerts when anomalies are detected; automatically stop training processes early when converged or anomalies detected to reduce the time and cost of training ML models; automatically identify bottlenecks of training and propose solutions to improve ML training.
· Reconstruct and automated an legacy pipeline to improve pipeline health for AWS ML Cloud service support.

AMAZON.COM, INC. (Amazon Web Services)   East Palo Alto, CA, virtual
SDE I Intern, Deep Learning at AWS   *June 2021 – September 2021*

· Built custom object detection YOLOv3 model for Amazon's SageMaker CV Framework, from scratch: built and trained Darknet53 backbone, FPN and Yolo head. Enabled multi-node and multi-gpu training
· Modified specialized CUDA operations (customized anchor generator and box assigner for training on GPU); implemented model optimizations (built-in DDP features, mixed precision, NHWC) to speed up training time
· Achieved 40% training speed optimization (ours: 170ms vs. baseline: 280ms)

Endeavor   New York, NY
Endeavor Insight Intern   *June 2019 – August 2019*

· Conducted in-depth research of more than 1000 entrepreneurship and entrepreneurial communities around the world to identify the key factors for successful ones and how policymakers can best support them
· Automated Excel importing and analysis of entrepreneur data-points in more than 300 metropolitan regions

RESEARCH EXPERIENCE

Speech Lab, Computer Science Department, Columbia University   New York, NY
<u>*Ph.D. student*</u> *(Advisor: Julia HIRSCHBERG, Ph.D.)*   *September 2022-Present*

· Research on emotion detection under cross-lingual, cross-cultural, and multimodal setting as part of the Cross-culture Communication and Understand project funded by DARPA.
· Proposed and received NSF funding to research using natural language and speech processing for mental health applications, *"Towards Safe, Robust, Interpretable Dialogue Agents for Democratized Medical Care"*
<u>*Research Assistant, Project Student*</u> *(Advisor: Julia HIRSCHBERG, Ph.D.)*   *January 2021-February 2022*

- Apply BERT model on sarcasm detection with experiments with a combination with pre-trained models and datasets to achieve best result on collected sarcasm tweets on COVID19, as part of the DARPA SemaFor project on identifying misinformation from social media
- Propose and experiment to use grounded video description model to assist the reasoning of radicalization

Text Intelligence Lab, School of Engineering, Westlake University Hangzhou, China
Full-time Research Assistant/Visiting Student (Advisor: Yue ZHANG, Ph.D.) *July 2020 – February 2021*

- Developed algorithms to enable scalable analysis on what Bert attends to during sentiment analysis and fine-tuning to explore how the neural network derived the answers in sentiment analysis tasks.
- Proposed to use rich emotion information to improve emotion elicitation task in dialogue generation using the MEmoR dataset by constructing latent emotion variable in CVAE model; achieved SoTA

Speech Accessibility Project (VoiceNextPage), Columbia University New York, NY
Research Assistant (Advisor: David WILLIAMS-KING, Ph.D.) *September 2019 – June 2020*

- Extended voice-controlled ebook-reader automator app to support user-customized voice commands and chain commands mixed with arbitrary dictation, and sent the commands to a PC for execution
- Worked with an open-source speech engine (Kaldi) and extended it to support decoding on a remote server
- Reconstructed back-end structure to optimize space and speed to allow more users per server

TEACHING AND SERVICES

Instructor, COMS4995 Semantic Representations for NLP Summer 2025
Fu Foundation School of Engineering and Applied Science, Columbia University *New York, NY*

Mentor, Mental Health x AI Hackathon Spring 2025
Teacher's College, Columbia University *New York, NY*

Teaching Assistant, Advanced Topics in Spoken Language Processing Spring 2023, Spring 2024
Computer Science Departmemt, Columbia University *New York, NY*

Mentor, Women In Science at Columbia Undergraduate Mentoring Program Spring 2023
Computer Science Departmemt, Columbia University *New York, NY*

Empirical Reasoning Fellow Fall 2019, Spring 2020
Empirical Reasoning Center, Barnard College *New York, NY*

Teaching Assistant, PSYCBC1101 Statistics Fall 2018
Psychology Department, Barnard College *New York, NY*

INVITED TALKS

"Sematic Representation", Natural Languages Processing Course, Columbia University *April 2025*
"Decoding Human Emotions", NLP Seminar, Columbia University *March 2025*
"Emotion Detection", Advanced Speech Processing Course, Columbia University *Spring 2023 - Spring 2025*

HONORS AND AWARDS

Member, **Psi Chi, International Honor Society in Psychology** *August 2020 – Present*
2025 Citadel PhD Travel Fund *2025*
2024 CRA-WP Grad Cohort for Women *2024*
Beyond Barnard GHC Award *2019, 2020*

SKILLS

Languages: English (fluent), Chinese (native), French (elementary).
Interest: Archery, Tennis, Oil Painting