JIHYUNG KIL

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RESEARCH

I am interested in **Vision-Language**. Recently, I have focused on the following topics:

- Pre-training Large Multimodal Models: ICCV'23
- Multimodal Agents (Embodied AI, Web Agents): CVPR'22, CVPR'24, Preprint: arXiv'24
- Visual Question Answering: EMNLP'21, ICCV'23, Preprint: arXiv'24
- Few/Zero-Shot Learning: NAACL'21

EMPLOYMENT

Amazon Alexa AI — May 2023 - Aug 2023
Research Intern, hosted by Joo-Kyung Kim, Omar Zia Khan — Bellevue, WA

- Preprint in arXiv'24. "II-MMR: Identifying and Improving Multi-modal Multi-hop Reasoning in Visual Question Answering"

Google Research — May 2022 - Nov 2022
Research Intern, hosted by Soravit (Beer) Changpinyo, Hexiang (Frank) Hu, Xi Chen, Radu Soricut — Los Angeles, CA

- Published in ICCV'23. "PreSTU: Pre-Training for Scene-Text Understanding"

Amazon SimBot Challenge — Dec 2021 - Aug 2022
Team Member, advised by Yu Su — Columbus, OH

- Developing an intelligent SimBot for language-guided visual navigation and task completion

Computer Science and Engineering, The Ohio State University — Aug 2018 - Present
Graduate Research Assistant, advised by Wei-Lun (Harry) Chao — Columbus, OH

- Published in CVPR'24, ICCV'23, CVPR'22, EMNLP'21, NAACL'21

Speech and Hearing Science, The Ohio State University — Aug 2017 - Jan 2018
Research Intern, advised by Yune Lee — Columbus, OH

- Neural activities classification on fMRI images using ML algorithms

Biomedical Informatics, The Ohio State University — May 2017 - Aug 2017
Research Intern, advised by Fuhai Li — Columbus, OH

- Chemical Named Entity Recognition (CNER) on PubMed abstracts

Biomedical Informatics, The Ohio State University — May 2016 - Aug 2016
Research Intern, advised by Philip Payne — Columbus, OH

- Published in AMIA 2017. "Retrospective Analysis of EHR and Administrative Data for Drug Repurposing Hypothesis Evaluation in Melanoma"

Republic of Korea Army — Sep 2012 - June 2014
Squad leader, Sergeant — Seoul, Korea

- Performing clerical and administrative duties in the military

IvyLine Academy — May 2011 - Aug 2011
Academic Tutor — Seoul, Korea

- Teaching mathematics in Scholastic Assessment Test (SAT)

EDUCATION

The Ohio State University, Columbus, Ohio, USA — Expected 2024
Ph.D. in Computer Science and Engineering, advised by Wei-Lun (Harry) Chao

The Ohio State University, Columbus, Ohio, USA — 2023
M.S. in Computer Science and Engineering, advised by Wei-Lun (Harry) Chao

The Ohio State University, Columbus, Ohio, USA — 2017
B.S. in Computer Science and Engineering

PUBLICATIONS

Preprints

[P2] Boyuan Zheng, Boyu Gou, Jihyung Kil, Huan Sun, Yu Su. "GPT-4V(ision) is a Generalist Web Agent, if Grounded". In arXiv'24. [paper]

[P1] Jihyung Kil, Farideh Tavazoee, Dongyeop Kang, Joo-Kyung Kim. "II-MMR: Identifying and Improving Multi-modal Multi-hop Reasoning in Visual Question Answering". In arXiv'24. [paper]

Peer-Reviewed Conferences

[C6] Jihyung Kil, Chan Hee Song, Boyuan Zheng, Xiang Deng, Yu Su, Wei-Lun Chao. "Dual-View Visual Contextualization for Web Navigation". In CVPR'24. [paper]

[C5] Jihyung Kil, Soravit Changpinyo, Xi Chen, Hexiang Hu, Sebastian Goodman, Wei-Lun Chao, Radu Soricut. "PreSTU: Pre-Training for Scene-Text Understanding". In ICCV'23. [paper]

[C4] Chan Hee Song, Jihyung Kil, Tai-Yu Pan, Brian M. Sadler, Wei-Lun Chao, Yu Su. "One Step at a Time: Long-Horizon Vision-and-Language Navigation with Milestones". In CVPR'22. [paper]

[C3] Jihyung Kil, Cheng Zhang, Dong Xuan, Wei-Lun Chao. "Discovering the Unknown Knowns: Turning Implicit Knowledge in the Dataset into Explicit Training Examples for Visual Question Answering". In EMNLP'21. [paper]

[C2] Jihyung Kil, Wei-Lun Chao. "Revisiting Document Representations for Large-Scale Zero-Shot Learning". In NAACL'21. [paper]

[C1] Kelly Regan, Jihyung Kil, Dongjo Ban, Gregg M. Gascon, Philip R. O. Payne. "Retrospective Analysis of EHR and Administrative Data for Drug Repurposing Hypothesis Evaluation in Melanoma". In AMIA'17.

Peer-Reviewed Workshops

[W1] Reshma R Babu, Yael Stochel, Christopher Lawrence, Daniel Rubenstein, Chuck Stewart, Wei-Lun Chao, David Carlyn, Jihyung Kil, Yu Su, Luke Song, Anuj Karpatne, Mohannad Elhamod, Krzysztof Kozak, Owen McMillan, Tanya Berger-Wolf. "Understanding Mimicry in Butterflies from Images using Machine Learning". In CVPR'22 CV4Animals.

TEACHING

Teaching Assistant — Aug 2018 - May 2020
The Ohio State University — Columbus, OH

- CSE 2331: Data Structures and Algorithms
- CSE 2111: Modeling and Problem Solving with Spreadsheets and Databases