Jiasheng Gu

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Research Interests

My research interest lies in the fields of natural language processing and generation, along with reliable and efficient methods for interconverting between natural language and different forms of data.
Long-term research goal: Use artificial intelligence to turn natural language into a bridge to various tasks.

Education

University of Southern California Los Angeles, CA
M.S. in Machine Learning and Data Science Aug. 2021 - May. 2023
Relevant Courses: Machine Learning, Deep Learning, Probability, Linear Algebra
GPA: 4.0/4.0 (100%)

Xidian University Xian, Shaanxi
B.E. in Telecommunications Engineering Sep. 2017 - Jun. 2021
GPA: 3.6/4.0 (90%, Top 10%)

Publications

Co-evolving Data-driven and NLU-driven Synthesizers for Generating Code in Domain Growth and Data Scarcity
Jiasheng Gu, Zifan Nan, Zhiyuan Peng, Dongkuan Xu, Xipeng shen
Submitted, ACL

Robustness of learning from task instructions
Jiasheng Gu, Hongyu Zhao, Hanzi Xu, Liangyu Nie, Hongyuan Mei, Wenpeng Yin
Arxiv, Submitted, ACL

The Evolution of Artificial Intelligence in Bio-Medicine
Jiasheng Gu, Lili Wang, Soroush Vosoughi
Submitted, Journal of Medical Internet Research (JMIR)

Research Experience

North Carolina State University
- Mentors: Dongkuan Xu, Xipeng Shen Aug. 2022 – Present
- Project: Zero-shot Code Generation via Rule-AI Co-learning from Document
- Contribution: Proposed a zero-shot code generation framework combining rule-based and AI-based methods to generate DSL code.
- Publication: ACL in prep

University of Southern California
- Mentors: Peter A. Beerel Aug. 2022 – Present
- Project: Designing visual networks with very low FLOPs
- Contribution: Proposed a dilated depthwise convolution that captures global information and extensive experiments are done on it.

Pennsylvania State University
- Mentor: Wenpeng Yin June. 2022 - Oct. 2022
- Project: Robustness of learning from task instructions
- Contribution: Experimented and analyzed the robustness of the instruction-tuned model on perturbed instructions.
- Publication: *Arxiv*

Dartmouth College
- Mentor: Soroush Vosoughi May. 2022 - Sep. 2022
- Project: The Evolution of Artificial Intelligence in Bio-Medicine
- Contribution: Proposed a method to analyze artificial intelligence techniques used in biomedical publications.
- Publication: JMIR submitted

University of Southern California
- Mentor: Pedro Szekely Jan. 2022 - May. 2022
- Project: Integrating factual information from language models into knowledge graph embeddings
- Contribution: Improved link prediction task by factual information mined from language models via prompts.

University of Southern California
- Mentor: Massoud Pedram Aug. 2021 - Dec. 2021
- Project: Reduced-Memory-Access Inference of Deep Neural Networks
- Contribution: Integrated PyTorch distributed data-parallel framework into the flow to support multi-GPU processing.

ETH Zürich
- Mentor: Yuyi Wang June. 2020 - Oct. 2020
- Project: Designing pre-training tasks for text summarization
- Contribution: Using trained metrics to find the highest importance sentences as summaries makes the pre-training task more effective.

Industry Experience

Lime
- SDE internship May. 2022 - Aug. 2022
- Reengineered a system for extracting and computing features to make it easier to modify feature definitions and compute features more efficiently.

Umer Technology
- NLP internship Apr. 2021 - Aug. 2021
- Deployed a medical named entity identification system via BERT+CRF.

Transwarp
- NLP internship Jan. 2021 - Apr. 2021
- Established a text summarization system with an extractive-abstractive structure.

Professional service

Program Committee
- The European Chapter of the ACL (EACL) 2023
- ACM International Conference on Web Search and Data Mining(WSDM) 2023

Teaching Experience

Teaching assistant, University of Southern California

- EE 503: Probability for Electrical and Computer Engineers — Fall 2022
- Grading course work and answering questions for students.

Awards

Master of Science (M.S.)

- Masters Students Honors Program (USC) — 2021

Bachelor of Engineering (B.E.)

- ZTE Algorithm Competition, Regional Winner Award — 2020
- Third Class Scholarship (Xidian University) — 2019

Skills

Programming

Python, C++, C, R, Java, SQL, JavaScript, HTML, MATLAB

Framework

PyTorch, Tensorflow, OpenCV, NumPy, Scikit-Learn, SciPy

Professional Softwares

Git, LaTeX, SPSS, Mathematica, AWS, GCP, Docker, MongoDB

References

Filip Ilievski, Assistant Professor
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