

Jiasheng Gu

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[Homepage](#) [GitHub](#) [LinkedIn](#) **Email:** gujiashe@usc.edu **Phone:** +1 (213) 204-0294

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. Bearel](#) 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 <ul style="list-style-type: none"> • EE 503: Probability for Electrical and Computer Engineers • Grading course work and answering questions for students. 	Fall 2022
Awards	Master of Science (M.S.) <ul style="list-style-type: none"> • Masters Students Honors Program (USC) 	2021
	Bachelor of Engineering (B.E.) <ul style="list-style-type: none"> • ZTE Algorithm Competition, Regional Winner Award • Third Class Scholarship (Xidian University) 	2020 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 Viterbi School of Engineering University of Southern California ilievski@isi.edu Peter A. Beerel, Professor Ming Hsieh Electrical and Computer Engineering Department University of Southern California pabeerel@usc.edu Soroush Vosoughi, Assistant Professor Department of Computer Science Dartmouth College soroush.vosoughi@dartmouth.edu Wenpeng Yin, Assistant Professor Computer Science and Engineering Department Pennsylvania State University wenpeng.yin@temple.edu Dongkuan Xu, Assistant Professor Department of Computer Science North Carolina State University dxu27@ncsu.edu Xipeng Shen, Professor Department of Computer Science North Carolina State University xshen5@ncsu.edu	