YU ZHOU

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EDUCATION

University of California, Los Angeles *Sep 2019 - Dec 2023*
Bachelor of Science in Mathematics of Computation with Minor in Data Science Engineering
- Overall GPA: 3.94 / 4.0

SELECTED PUBLICATIONS

Non-Sequential Graph Script Induction via Multimedia Grounding *ACL 2023*
***Yu Zhou**, Sha Li, Manling Li, Xudong Lin, Shih-Fu Chang, Mohit Bansal, Heng Ji*

Localizing Active Objects from Egocentric Vision with Symbolic World Knowledge *EMNLP 2023 (Oral)*
Te-Lin Wu, **Yu Zhou*** *(equal contribution), Nanyun Peng*

Dialectal Biases in Text-to-Image Generative Models *TACL 2024 (to be submitted)*
***Yu Zhou**, Da Yin, Allen Cheung, Connor Couture, Kai-Wei Chang, Nanyun Peng*

RESEARCH EXPERIENCE

University of California, Los Angeles *February 2023 – Present*
advisors: Prof. Nanyun Peng, Kai-Wei Chang
- Significantly improved **active object detection and tracking** in egocentric videos via symbolic **knowledge extraction, reasoning, and joint inference**.
- Created a multi-dialectal benchmark to **evaluate dialectal bias** in text-to-image generative models and proposed efficient + effective **mitigation** strategies.
- Researching targeted visual data augmentation to improve **object & event recognition** based on few-shot **contrastive human feedback**.

University of Illinois Urbana-Champaign *May 2022 – January 2023*
advisors: Prof. Heng Ji, Mohit Bansal, Shih-Fu Chang
- Introduced **graph script learning** for **procedural tasks** aiming to capture sequential, optional, and interchangeable step relationships. Designed a SOTA **constrained generation** model that learns from existing **video and textual** resources to produce explicit schema graphs and improve downstream **planning** tasks.

Tsinghua University *May 2021 – April 2022*
advisor: Prof. Juanzi Li
- Collaborated to implement Iterative Strict Density-Based Clustering for Chinese News Streams (**CCIR 2021**).
- Collaborated to construct CStory, a new large-scale Chinese news story-line dataset resource (**CIKM 2022**).

RESEARCH COURSE PROJECTS

Advancing Transformers' Capabilities in Commonsense Reasoning *Fall 2022*
advisor: Prof. Nanyun Peng
- Led team of 4 to improve commonsense reasoning by >**63% over previous SOTA** on the Com2Sense hidden testset.
- Ranked **#1 among 12 teams** and was submitted to **DARPA Machine Common Sense (MCS)** Project Evaluation.

Hard Label Black Box Node Injection Attack on Graph Neural Networks *Spring 2022*
advisor: Prof. Yizhou Sun
- Proposed the first non-targeted hard-label black box node injection attack on GNNs for graph classification.
- Achieves high attack success rate with low perturbation budget for on three scientific and social graph datasets.

Current Developments in Object Detection (Survey) *Winter 2022*
advisor: Prof. Bolei Zhou
- Evaluated detection-head/neck/backbone components of 26 current object detection algorithms w.r.t performance and robustness against real-world black-box adversarial attacks. Project ranked **#1 among 21 teams**.

ACADEMIC ACTIVITIES

Reviewer / Program Committee:	ACL 2023, EMNLP 2023, EMNLP 2023 Industry Track
Awards Committee:	SoCal NLP Symposium 2023
Conference Presentations:	ACL 2023, EMNLP 2023 (Oral), SoCal NLP Symposium 2023
Conference Volunteer:	ACL 2023

SKILLS

Programming:	C/C++, Python, JavaScript, SQL, R, MATLAB, HTML, CSS
Technologies:	UNIX, Git, React, PostgreSQL, MongoDB, Redis, Neo4j
Machine Learning:	PyTorch, TensorFlow, MapReduce, Apache Spark

RELEVANT COURSES

Fairness, Transparency, and Robustness in Natural Language Processing (Graduate) *Winter 2023*
- Prof. Kai-Wei Chang (Grade: A+)

Natural Language Processing *Fall 2022*
- Prof. Nanyun Peng (Grade: A+)

Graph Neural Networks (Graduate) *Spring 2022*
- Prof. Yizhou Sun (Grade: A)

Deep Learning for Computer Vision *Winter 2022*
- Prof. Bolei Zhou (Grade: A+)

Artificial Intelligence *Winter 2022*
- Prof. Quanquan Gu (Grade: A+)

Machine Learning *Winter 2021*
- Prof. Sriram Sankararaman (Grade: A+)

Algorithms and Complexity *Spring 2021*
- Prof. Cho-Jui Hsieh (Grade: A+)

OTHER PUBLICATIONS

Iterative Strict Density-Based Clustering for News Stream *CCIR 2021*
Kaijie Shi, Jiaxin Shi, ***Yu Zhou****, Lei Hou, Juanzi Li*

Measurement methods of radial flow in relativistic heavy-ion collisions *Physical Review C (Journal)*
Peng Yang, Lin Li, ***Yu Zhou****, Zhiming Li, Mingmei Xu, Yeyin Zhao, Yuanfang Wu*

Machine learning phase transitions of the three-dimensional Ising universality class *Chinese Physics C (Journal)*
Xiaobing Li, Ranran Guo, ***Yu Zhou****, Kangning Liu, Jia Zhao, Fen Long, Yuanfang Wu, Zhiming Li*

Investigations into the characteristics and influences of nonequilibrium evolution *Physical Review C (Journal)*
Xiaobing Li, Mingmei Xu, Yanhua Zhang, Zhiming Li, ***Yu Zhou****, Jinghua Fu, Yuanfang Wu*

Locating fixed points in the phase plane *Physical Review E (Journal)*
Yanhua Zhang, Yeyin Zhao, Lizhu Chen, Xue Pan, Mingmei Xu, Zhiming Li, ***Yu Zhou****, Yuanfang Wu*