YU ZHOU

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EDUCATION

University of California, Los Angeles *September 2019 - Present*
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*
Te-Lin Wu, **Yu Zhou***, Nanyun Peng*

RESEARCH EXPERIENCE

University of California, Los Angeles *January 2023 – Present*
advisors: Prof. Nanyun Peng, Kai-Wei Chang
- Researched egocentric vision and proposed a **knowledge extraction & symbolic reasoning** pipeline to significantly improve active object detection on Ego4D and object tracking on Epic-Kitchens.
- Studied **dialectal bias** in vision-language models and proposed a multi-dialectal **benchmark** along with **mitigation**.

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

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 via MMDetection (Survey) *Winter 2022*
advisor: Prof. Bolei Zhou
- Evaluated detection-head/neck/backbone components of 26 current object detection algorithms and examined detection robustness against real-world black-box adversarial attacks. Project was scored **#1 among 21 teams**.

SERVICES

Reviewer / Program Committee: ACL 2023, EMNLP 2023, EMNLP 2023 Industry Track
Conference Volunteer: ACL 2023, SoCal NLP Symposium 2023

SKILLS

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

Central China Normal University Key Laboratory of Quark and Lepton Physics *June 2019 - July 2022*
Research Engineer (Part-time)
- Applied machine learning techniques to help physics researchers identify the critical fluctuations of quantum chromodynamics (QCD) phase transition, and determine the QCD phase boundary in relativistic heavy-ion collisions.

UCLA Structures-Computer Interaction Laboratory *July 2020 - February 2021*
Research Engineer
- Developed simultaneous localization and mapping algorithms to support self-navigation of agricultural robots using camera visual input and inertial measurement unit input.

Lexing Interactive Technologies *May 2020 - July 2020*
Software Engineer
- Developed and managed an educational testing system website and database for students at local universities.

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*