Ziyi Kou

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Multimodal Generative AI / Trustworthy Computer Vision / Graph Neural Network / Personalized Recommender System

EDUCATION

PhD, Computer Science & Engineering **University of Notre Dame** **2020.8 - Present**

Exchange Student of Information Science at University of Illinois Urbana-Champaign, 2021.8-2022.5.
Courses: Advanced Computer Algorithm, Operating System, etc. GPA 3.78.

Master's Degree, Computer Science **University of Rochester** **2018.9 - 2020.5**

Courses: Machine Learning, Advanced Computer Vision. Artificial Intelligence, etc. GPA 3.83.

Bachelor's Degree, Software Engineering **Chongqing University, China** **2014.9 - 2018.6**

Courses: Programming Language, Advanced Mathematics, Linear algebra, etc. GPA 3.51.

SKILLS

Programming: Python, Java, SQL, HTML, JavaScript, MatLab, Spark, Bash, Arduino.

Packages: PyTorch, Keras, PyTorch-Lightning, Transformer, DGL, MMCV, OpenCV, Sklearn, AWS.

WORK EXPERIENCE

Research Scientist Intern **Meta** **2023.12 - 2024.03**

Will focus on trustworthy topics for visual tracking models on human-wearable VR devices.

Applied Scientist Intern **Amazon** **2023.05 - 2023.08**

Designed a graph neural network model to estimate Amazon customer-instock-value. Paper under review at Amazon internal conference.

Machine Learning Engineer Intern **Instacart** **2022.10 - 2023.02**

Explored user-seller-product interactions to recommend basket products for Instacart users with cold sellers. Published at CIKM2023.

Machine Learning Engineer Intern **GoDaddy Inc.** **2022.05 - 2022.08**

Focused on the design of a user-diversified multi-relational graph neural network for personalized online recommendation.

Research Assistant **University of Rochester** **2019.10 - 2020.04**

Focused on image object localization, face generation and video anomaly detection. Published at ECCV, WACV, etc.

Deep Learning Engineer Intern **Suzhou Institute of AI, Shanghai Jiao Tong University** **2019.06 - 2019.08**

Focused on the design of a light angular-based face recognition algorithm for smart-TV devices to recognize Asian celebrity faces in real time.

MAIN PUBLICATIONS

Towards Scalable Story Visualization Enhanced by GPT **WebConf'24**

Keywords: Text-to-Image Generation, Graph Neural Network, GPT 1st Author; Under Review

GIFA: Generating Identity-Protected Segments for Fairness Enhanced Face Recognition **AAAI'23**

Keywords: Face Recognition, Fairness, Masked Language Modeling 1st Author; Under Review

Modeling Sequential Collaborative User Behaviors for Seller-aware Next Basket Recommendation **CIKM'23**

Keywords: Basket Recommendation, Graph Transformer Model, Cold Start Learning 1st Author

Few-shot Low-resource Knowledge Graph Completion with Multi-view Task Representation Generation **KDD'23**

Keywords: Knowledge Graph Completion, Few-shot Learning 2nd Author

A Controllable Prompt Adversarial Attacking Framework for Black-Box Text2Image Models **IJCAI'23**

Keywords: Gradient Hard-Label Attacking, Text2Image Generation 1st Author

A Crowd-AI Duo Relational Graph Learning Framework Towards Social Impact Aware Photo Classification **AAAI'23**

Keywords: Image Classification, Graph Neural Network, Human-AI Interaction. 2nd Author

A Web Crowdsourcing Based Face Partition Approach Towards Privacy-Aware Face Recognition **WebConf'22**

Keywords: Face Recognition, Graph Neural Network, Privacy Machine Learning. 1st Author

A Duo-Generative Approach to Explainable Multimodal COVID-19 Misinformation Detection **WebConf'22**

Keywords: Visual-Language Modeling, Misinformation Detection. co-1st Author

Human-AI Interaction Towards Natural Language Explanation based COVID-19 Misinformation Detection **IJCAI'22**

Keywords: Knowledge Graph, Misinformation Detection, Language Generation. 1st Author

A Crowdsourcing Multi-Modal Knowledge Graph Approach to Explainable Fauxtography Detection **CSCW'22**

Keywords: Multimodal Knowledge Graph, Multimodal misinformation Detection. 1st Author

Contrastive Domain Adaptation for Early Misinformation Detection: A Case Study on COVID-19 **CIKM'22**

Keywords: Knowledge Transfer, Misinformation Detection. 3rd Author

A Hierarchical Crowdsource Knowledge Graph Approach to Explainable COVID-19 Misinformation Detection **GROUP'22**

Keywords: Misinformation Detection; Knowledge Graph Modeling 1st Author

Improve CAM with Auto-adapted Segmentation and Co-supervised Augmentation **WACV'21**

Keywords: Object Localization, Weakly Supervised Learning. 1st Author

Learning VQA towards Understanding Web Instructional Videos **WACV'21**

Keywords: Visual Question Answering, Graph Neural Network. 3rd Author

ExgFair: A Crowdsourcing Data Exchange Approach To Fair Human Face Datasets Augmentation **BigData'21**

Keywords: Fairness Machine Learning; Face Attribute Classification. 1st Author

Faircrowd: Fair human face dataset sampling via batch-level crowdsourcing bias inference **IWQOS'21**

Keywords: Fairness Machine Learning, Face Attribute Classification. 1st Author

What comprises a good talking-head video generation **CVPRW'20**

Keywords: Lip Reading Recognition, Sequential Learning. co-1st Author

Exfaux: A weakly supervised approach to explainable fauxtography detection **BigData'20**

Keywords: Misinformation Detection; Graph Neural Network 1st Author

AWARDS

CSE Outstanding Research Award, University of Notre Dame, 2023

3rd Winner of Ebay University Machine Learning Competition: Simi-Supervised Name Entity Recognition, 2022

Winner of Sequential Dynamic Molecular Prediction AI Competition, Argonne US National Lab, 2022

Bronze Medal for H&M Fashion Recommendations, Kaggle 2022

PhD Student Travel Grants, IEEE INFOCOM and IEEE BigData

Graduate Tuition Scholarship, University of Rochester 2018

Department-level Student Scholarship, Chongqing University 2018

Department-level Honor Graduate, Chongqing University 2018