Ziyi Kou

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Personalized Generative AI / Trustworthy Computer Vision (Privacy, Safety) / Human 3D Pose Estimation / Online Recommender System

EDUCATION

PhD Candidate, Computer Science **University of Notre Dame** **2020.8 – 2024.8 (Expected)**

Exchange Student of Information Science at University of Illinois Urbana-Champaign, 2021.8-2022.5.
Courses: Advanced Computer Algorithm, Computer Vision, 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

Python, Java, C++, PyTorch, Keras, Spark, DGL, MMCV, OpenCV, Amazon MTurk

WORK EXPERIENCE

Research Scientist Intern **Meta, Reality Lab** **2023.12 - 2024.03**

Designing a semi-supervised glove pose estimation model based on transferred visual pose knowledge and glove sensor signals.

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

Designed a multi-modal causal graph neural network model for long-term effect of e-commerce customer behavior. Received return intern. offer.

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

Designed a bipartite graph transformer model for basket-level product recommendation with cold sellers. Published at CIKM2023.

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

Designed a user-ranking-aware multi-relational graph neural network for personalized online recommendation. Received return internship offer.

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.

SELECTED PUBLICATIONS

Automating Portrait Generation for Zero-Shot Story Visualization with Multi-Character Interactions **KDD'24**

A zero-shot story visualization framework based on LLMs and graph driven diffusion personalization [Under Review] [Link]

Generating Fake Identities for Fair Face Recognition based on Identity-Protected Segments **IJCAI'24**

A fairness-privacy-aware face recognition framework based on adversarial learning and human face inpainting. [Under Review] [Link]

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

A basket-level recommender system based on graph transformer modeling and a novel triplet pairwise loss [AC 24.0%] [Link]

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

A few-shot learning framework for knowledge graph completion based on multi-view task representation [AC 22.3%] [Link]

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

A adversarial prompt attacking framework for black-box text-to-image diffusion model based on gradient sampling [AC 15.0%] [Link]

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

A social impact aware image classification model based on multi-relational graph modeling and crowdsourcing [AC 19.6%] [Link]

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

A privacy-aware face recognition framework based on human face segmentation and graph neural network [AC 17.7%] [Link]

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

A multi-modal misinformation detection framework based on latent feature reconstruction and cross-modal attention [AC 17.7%] [Link]

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

A human-in-loop misinformation detection framework based on natural language feature encoding and crowdsourcing [AC 12.6%] [Link]

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

A multi-modal misinformation detection framework based on multi-modal knowledge graph and face recognition [AC 24.0%] [Link]

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

A misinformation detection framework based on contrastive learning and domain adaptation [AC 23.3%] [Link]

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

A weakly-supervised objection localization framework based on label-wise neuron activation [AC 34.5%] [Link]

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

A video-question-answering framework based on a recurrent graph neural network [AC 34.5%] [Link]

Talking-head generation with rhythmic head motion **ECCV'20**

A multi-modal talking-head generative framework based on 3D face wrapping and meta motion learning [AC 27.1%] [Link]

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