Ziyi Kou

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Personalized Generative AI / Trustworthy Computer Vision (Bias, Privacy) / 3D Pose Estimation / Graph Neural Network

EDUCATION

PhD Candidate, Computer Science   **University of Notre Dame**   **2020.8 – 2024.5**

Exchange Student of Information Science at University of Illinois Urbana-Champaign, 2021.8-2022.5.

Courses: Advanced Computer Algorithm, Computer Vision, etc.

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

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

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

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

SKILLS

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

WORK EXPERIENCE

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

Focused on visual knowledge transfer for 3D glove pose estimation in VR. Paper under review. Received return offer.

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	[AC 20.0%] [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