Ziyi Kou

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Trustworthy Deep Learning - Graph Neural Network - Ranking - Visual Language Modeling

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.

EXPERIENCE

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

Focusing on retailer driven cold start product recommendation problem with hierarchical user-retailer-product relations. Plan to publish at KDD.

Research Assistant   **University of Notre Dame**   **2022.1 - Present**

Focusing on multi-modal data mining, fairness/privacy machine learning and graph modeling. Published at WWW, IJCAI, CSCW, BigData, etc.

Machine Learning Intern   **GoDaddy Inc.**   **2022.5 - 2022.8**

Proposed a STOA multi-relational hierarchical graph neural network for personalized and diversified online product recommendation.

Research Assistant   **University of Rochester**   **2019.10 - 2020.4**

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

Deep Learning Intern   **Suzhou Institute of AI, Shanghai Jiao Tong University**   **2019.6 - 2019.8**

Proposed a light-weighted angular-based face recognition algorithm for smart-TV devices to recognize Asian celebrity faces in real time.

Main Publications

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

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

An Adversarial Privacy-Preserved Face Component Graph Towards Fair Face Recognition   **SIGIR'23**

Keywords: Graph Neural Network, Face Recognition, Fairness Machine Learning.   1st Author; Under Review

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   **WWW'22**

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

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

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

Keywords: Face Generation, Audio Driven Machine Learning.   5th 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

3rd Winner of Ebay University Machine Learning Competition – Simi-Supervised Name Entity Recognition, 2023

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