

# Ziyi Kou

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Trustworthy Deep Learning - Visual Language Modeling - Graph Neural Network - Recommender System

## EDUCATION

<b>PhD, Computer Science &amp; Engineering</b>	<b>University of Notre Dame</b>	<b>2020.8 - Present</b>
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.		
<b>Master's Degree, Computer Science</b>	<b>University of Rochester</b>	<b>2018.9 - 2020.5</b>
Courses: Machine Learning, Advanced Computer Vision. Artificial Intelligence, etc. GPA 3.83.		
<b>Bachelor's Degree, Software Engineering</b>	<b>Chongqing University, China</b>	<b>2014.9 - 2018.6</b>
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, MMCV, OpenCV, Sklearn, AWS.

## EXPERIENCE

<b>Machine Learning Intern</b>	<b>Instacart</b>	<b>2022.10 - 2023.02</b>
Will focus on designing multimodal recipe graph neural network for personalized product list generation. Plan to publish at IJCAI, KDD, etc.		
<b>Research Assistant</b>	<b>University of Notre Dame</b>	<b>2022.1 - Present</b>
Focused on multi-modal data mining, fairness/privacy machine learning and graph modeling. Published at WWW, IJCAI, CSCW, BigData, etc.		
<b>Machine Learning Intern</b>	<b>GoDaddy Inc.</b>	<b>2022.5 - 2022.8</b>
Proposed a multi-relational hierarchical graph neural network for personalized and diversified online product recommendation.		
<b>Research Assistant</b>	<b>University of Rochester</b>	<b>2019.10 - 2020.4</b>
Focused on image object localization, face generation and video anomaly detection. Published at ECCV, WACV, etc.		
<b>Deep Learning Intern</b>	<b>Suzhou Institute of AI, Shanghai Jiao Tong University</b>	<b>2019.6 - 2019.8</b>
Proposed a light-weighted angular-based face recognition algorithm for smart-TV devices to recognize Asian celebrity faces in real time.		

## Main Publications

<b>An Adversarial Privacy-Preserved Face Component Graph Towards Fair Face Recognition</b>	<b>WWW'23</b>
Keywords: Graph Neural Network, Face Recognition, Fairness Machine Learning.	1 <sup>st</sup> Author; Under Review
<b>A Crowd-AI Duo Relational Graph Learning Framework Towards Social Impact Aware Photo Classification</b>	<b>AAAI'23</b>
Keywords: Image Classification, Graph Neural Network, Human-AI Interaction.	2 <sup>nd</sup> Author; Under Review
<b>A Web Crowdsourcing Based Face Partition Approach Towards Privacy-Aware Face Recognition</b>	<b>WWW'22</b>
Keywords: Face Recognition, Graph Neural Network, Privacy Machine Learning.	1 <sup>st</sup> Author
<b>A Duo-Generative Approach to Explainable Multimodal COVID-19 Misinformation Detection</b>	<b>WWW'22</b>
Keywords: Visual-Language Modeling, Misinformation Detection.	co-1 <sup>st</sup> Author
<b>Human-AI Interaction Towards Natural Language Explanation based COVID-19 Misinformation Detection</b>	<b>IJCAI'22</b>
Keywords: Knowledge Graph, Misinformation Detection, Language Generation.	1 <sup>st</sup> Author
<b>A Crowdsourcing Multi-Modal Knowledge Graph Approach to Explainable Fauxtography Detection</b>	<b>CSCW'22</b>
Keywords: Multimodal Knowledge Graph, Multimodal misinformation Detection.	1 <sup>st</sup> Author
<b>Contrastive Domain Adaptation for Early Misinformation Detection: A Case Study on COVID-19</b>	<b>CIKM'22</b>
Keywords: Knowledge Transfer, Misinformation Detection.	3 <sup>rd</sup> Author
<b>Improve CAM with Auto-adapted Segmentation and Co-supervised Augmentation</b>	<b>WACV'21</b>
Keywords: Object Localization, Weakly Supervised Learning.	1 <sup>st</sup> Author
<b>Learning VQA towards Understanding Web Instructional Videos</b>	<b>WACV'21</b>

Keywords: Visual Question Answering, Graph Neural Network.

### **ExgFair: A Crowdsourcing Data Exchange Approach To Fair Human Face Datasets Augmentation**

Keywords: Fairness Machine Learning; Face Attribute Classification.

### **Faircrowd: Fair human face dataset sampling via batch-level crowdsourcing bias inference**

Keywords: Fairness Machine Learning, Face Attribute Classification.

### **Talking-head generation with rhythmic head motion**

Keywords: Face Generation, Audio Driven Machine Learning.

### **What comprises a good talking-head video generation**

Keywords: Lip Reading Recognition, Sequential Learning.

### **Awards**

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

3<sup>rd</sup> Author

**BigData'21**

1<sup>st</sup> Author

**BigData'20**

1<sup>st</sup> Author

**ECCV'20**

5<sup>th</sup> Author

**CVPRW'20**

co-1<sup>st</sup> Author