# Ziyi Kou

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## EDUCATION

**University of Illinois Urbana-Champaign** **Champaign, IL** **2021.6 - present**
Ph.D Student in Information Science, *Advisor: Dong Wang*

**University of Notre Dame** **Notre Dame, IN** **2020.9 – 2021.6**
Ph.D Student in Computer Science and Engineering, *Advisor: Dong Wang*

**University of Rochester** **Rochester, NY** **2018.9 – 2020.6**
M.S. in Computer Science, *Advisor: Chenliang Xu.*

**Chongqing University** **Chongqing, China** **2014.9 – 2018.6**
B.Eng. in Software Engineering

## EXPERIENCE

**Research Assistant** **University of Notre Dame & UIUC** **July 2020 – present**

- *Explain Latest COVID-19 fake news: A hierarchical crowdsourcing COVID-19 graph for unseen fake news explanation*
  - Built a hierarchical COVID-19 human knowledge graph to detect unseen COVID-19 misinformation in social media using co-attention mechanism and relation graph neural network (RGCN).
  - The algorithm can accurately detect the newly emerged COVID-19 misinformation in social media platforms
- *Make a Dataset Fair: A human-centered dataset sampling framework to improve data fairness*
  - Built a human-centered dataset sampling framework to improve the fairness of a given human face dataset by tasking human crowd workers to estimate the demographic attributes of various human faces.
  - The framework accurately samples sub-datasets from existing face datasets to improve data fairness
- *Identify Online COVID-19 Fake News: A human centered COVID-19 knowledge graph for fake news detection*
  - Built a crowdsource knowledge graph based on COVID-19 news articles and a relation graph neural network (RGCN) to model the knowledge graph for COVID-19 fake news detection
  - The proposed framework achieves state-of-the-art performance on the COVID-19 fake news detection task.
- *Detect and Explain Social Media Misinformation: An explainable misinformation detection algorithm*
  - Built an intelligent system to detect and explain multi-modal misinformation in social media using a user comment guided graph convolutional neural network (GCN)
  - The system effectively identifies multi-modal misinformation and retrieves explanations from user comments.

**Research Assistant** **University of Rochester** **Sep 2019 – June 2020**

- *Detect Image Objects for Free: A weakly supervised object detection algorithm*
  - Built a metric-learning based object localization algorithm to detect specific objects and their locations in given images with no position-level human annotation for training.
  - The proposed algorithm achieved state-of-the-art performance on the object location task.

**Machine Learning Engineer Intern** **Shanghai Jiaotong University, China** **June 2019 – Sep 2019**

- *Recognize TV Celebrity: A TV embedded Face Recognition Application for Asian Celebrity*
  - Developed an Asian face specific recognition algorithm based on LightCNN model and ArcLoss Function.
  - The developed application can accurately detect Asian celebrity faces in an unconstrained environment.

## SKILLS

**Programming:** Python, Java, Javascript, HTML, Django, Scrapy, Selenium, SQL, Shell, C#

**Machine Learning and Computer Vision:** PyTorch, Keras, scikit-learn, DGL, OpenCV, Pillow, FFmpeg

**Technical Application:** AWS EC2, AWS S3, Docker, Amazon MTurk, NVIDIA GPU, Unity 3D, Wireshark

## SELECTED PUBLICATIONS

[1] **Z. Kou**, L. Shang, Y. Zhang, D. Wang. "HC-COVID: A Hierarchical Crowdsource Knowledge Graph to Explainable COVID-19 Misinformation Detection." Proceedings of the ACM on Human-Computer Interaction (GROUP' 22)

[2] **Z. Kou**, Y. Zhang, L. Shang, and D. Wang. "FairCrowd: Fair Human Face Dataset Sampling viaBatch-Level Crowdsourcing Bias Inference." In IEEE/ACM International Symposium on Quality of Service (IWQoS' 21)

[3] **Z. Kou**, L. Shang, Y. Zhang, and D. Wang. "FakeSens: A Social Sensing Approach to COVID-19 Misinformation Detection on Social Media." In IEEE International Conference on Distributed Computing in Sensor Systems (DCOSS' 21)

[4] **Z. Kou**, D. Zhang, L. Shang, and D. Wang. "ExFaux: A Weakly Supervised Approach to Explainable Fauxtography Detection." In IEEE International Conference on Big Data (Big Data' 20)

[5] **Z. Kou**, G. Cui, S. Wang, W. Zhao, and C. Xu. "Improve CAM with Auto-adapted Segmentation and Co-supervised Augmentation." In IEEE/CVF Winter Conference on Applications of Computer Vision (WACV' 21)

## Award

- INFOCOM 2021 Student Grant
- Academic Tuition Scholarship, University of Rochester