

LINGXIAO LI

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INTERESTS

Unsupervised/Few-shot Learning, Representation Learning, OOD Generalization

EDUCATION

Columbia University

Master of Science in Computer Science

New York, NY

Jan 2021 - May 2022

- GPA: 3.66/4.00
- Courses: Natural Language Processing, Advanced Algorithm, Machine Learning, Computer Vision

University of Liverpool

Bachelor of Science with Honours in Computer Science

Liverpool, UK

Sep 2016 - May 2020

- GPA: 3.89/4.00
- Courses: Linear Algebra, Data Structures, Artificial Intelligence, Data Mining and Visualization

PUBLICATIONS

1. **Lingxiao Li**, Yi Zhang, and Shuhui Wang. “The Euclidean Space is Evil: Hyperbolic Attribute Editing for Few-shot Image Generation.” *International Conference on Computer Vision (ICCV)*, 2023.
2. Wei Hao, Zixi Wang, Lauren Hong, **Lingxiao Li**, Nader Karayanni, Chengzhi Mao, Junfeng Yang, and Asaf Cidon. “Monitoring and Adapting ML Models on Mobile Devices.” *arXiv preprint arXiv:2305.07772*, 2023. **under review**
3. Yuanyuan Zhang, Ruiwei Guan, **Lingxiao Li**, Rui Yang, Yutao Yue, Eng Gee Lim, and Zidong Wang. “RadarODE: An ODE-based ECG Recovery and Auto-segmentation Model from Millimeter-wave Radar.” *IEEE Transactions on Instrumentation and Measurement (TIM)*. **under review**
4. Congwei Ni, Sihan Cheng, Xutao Wang, Tianyun Hu, Zhenjin Dai, Dongliang Zhang, **Lingxiao Li**, and Xin Huang. “Model Checking the Reliability of Data Center Network.” *International Conference on Information Technology in Medicine and Education (ITME)*. *IEEE*, 2018.

RESEARCH EXPERIENCE

Few-shot Image Generation in Hyperbolic Space

Research Assistant, Chinese Academy of Sciences

Aug 2021 - present

Advisor: Prof. Shuhui Wang

- Proposed a simple yet effective method for few-shot image generation, i.e., HAE
- Project latent code to hyperbolic space using the GAN inversion method to achieve highly explainable hierarchical feature representation for images
- Extensive experiments and visualization show that our method achieved state-of-the-art few-shot image generation with high quality and diversity
- The paper “The Euclidean Space is Evil: Hyperbolic Attribute Editing for Few-shot Image Generation” was accepted by ICCV

Monitoring and Adapting to Domain Shift Across Millions of Edge Devices

Department of Computer Science, Columbia University

Jan 2022 - Oct 2023

Advisor: Prof. Junfeng Yang and Prof. Asaf Cidon

- Implemented data stream clustering algorithms based on Kolmogorov–Smirnov, and Kullback–Leibler divergence tests to cluster real-world data by different types of domain drifts
- Trained test time domain adaptation models w/o labels using TENT, MEMO, etc.
- Designed and created dataset ImageNetOS (Out-Of-Distribution Streaming) to simulate different real-world domain drifts
- Completed and wrote parts of the paper “Monitoring and Adapting ML Models on Mobile Devices”, under review

Cloud Enhanced Open Software Defined Mobile Wireless Testbed for City-Scale Deployment (COSMOS)

Department of Electrical Engineering, Columbia University

May 2021 - Jan 2022

Advisor: Prof. Zoran Kostic

- Deployed and trained a customized YOLOv4 with a hand-annotated dataset on Google Cloud Platform to track small objects in video from a 12th-floor eye-bird camera
- Decorrelated the confounder in the training dataset to improve the accuracy of the detection using causal inference methods
- Deployed DeepSORT tracking algorithm and achieved an average of over 95% counting accuracy for vehicles through traffic intersections

ODE-based ECG Recovery and Auto-segmentation Model from Millimeter-wave Radar

Department of Computer Science, Xi'an Jiao-tong Liverpool University

June 2023 - present

Advisor: Prof. Rui Yang

- The first work that considers and models the first and second prominent vibrations of cardiac activities
- Propose the loss function customized for the ODE model and multi-objective optimization problem
- The proposed framework can automatically realize the segmentation of the ECG signals without extra algorithms
- Completed and wrote parts of the paper “RadarODE: An ODE-based ECG Recovery and Auto-segmentation Model from Millimeter-wave Radar”, under review

TEACHING EXPERIENCE

Columbia University

New York, NY

CSOR W4231 - Analysis of Algorithms

Spring 2022

Instructor: Eleni Drinea

- Teaching Assistant for 400 students
- Developed course material, assignments and gave tutorials

SKILLS

- **Frameworks:** Pytorch, TensorFlow, Keras, OpenCV
- **Programming Languages:** Python, Java, Matlab, L^AT_EX, HTML, SQL, JavaScript, Swift, PHP

ACTIVITIES

- **Volunteer:** Primary School Teacher, AIESEC Overseas Volunteer Program in Colombo, Sri Lanka, Jul 2017
- **Interests:** Classical Music, Trumpet (Trumpet Player of Suzhou Youth Philharmonic Orchestra), History, Philosophy
- **GRE:** 322 [V154+Q168] +W3.0, Nov. 2019