LINGXIAO LI

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INTERESTS

Unsupervised (Self-supervised) Learning, Representation Learning, OOD Generalization

EDUCATION

Columbia University **New York, NY**
Master of Science in Computer Science *Jan 2021 - May 2022*

- GPA: 3.66/4.3
- Courses: Natural Language Processing, Advanced Algorithm, Machine Learning, Computer Vision

University of Liverpool **Liverpool, UK**
Bachelor of Science with Honours in Computer Science *Sep 2016 - May 2020*

- GPA: 3.89/4.0
- 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.
3. Congwei Ni, Sihan Cheng, Xutao Wang, Tianyun Hu, Zhenjin Dai, Dongliang Zhang, **Lingxiao Li**, Xin Huang. "Model Checking the Reliability of Data Center Network." *International Conference on Information Technology in Medicine and Education (**ITME**). IEEE*, 2018

EXPERIENCE

Few-shot Image Generation
Research Assistant, Chinese Academy of Sciences *Aug 2021 - present*
Advisor: Prof. Shuhui Wang
Description: Hierarchical image feature editing in hyperbolic space for few-shot image generation

- Proposed a simple yet effective method for few-shot image generation, i.e., hyperbolic attribute editing
- 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 - present*
Advisor: Prof. Junfeng Yang and Prof. Asaf Cidon
Description: Monitored and adopted domain shifts at scale in the post-deployment phase to maintain a healthy and functional deep learning system

- 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/ or 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

PROJECTS

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

Natural Language Processing Chatbot
Department of Computer Science, University of Liverpool *Feb 2019 - May 2019*
Advisor: Dr. Fan Zhang

- Created an interpreter with RASA-NLU; trained the interpreter with data annotated by hand
- Tested if the Chatbot could efficiently help users to arrange schedules; the experiment results showed the Chatbot can help users manage schedules with high accuracy

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, LaTeX, 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