

WENQIAN YE

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EDUCATION

New York University Master of Science in Computer Science	New York, NY Sept. 2020 – May 2022
University of Illinois Urbana-Champaign Bachelor of Science in Mathematics and Computer Science	Champaign, IL Sept. 2017 – May 2020
University of California, Berkeley Summer Visiting Student	Berkeley, CA May. 2016 – Aug. 2016

SELECTED PUBLICATIONS

(* indicates co-first authors)

- Wenqian Ye***, Xu Cao*, Elena Sizikova, Kenny Moise, Megan Coffee. Masked Domain Adaptation (MDA): Lipschitz Regularized Masked Self-supervised Learning for Chest X-ray Domain Adaptation. *Under review at The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2023.
- Xu Cao*, **Wenqian Ye***, Elena Sizikova, Xue Bai, Megan Coffee, Hongwu Zeng, Jianguo Cao. ViTASD: Robust ViT Baselines for Autism Spectrum Disorder Facial Detection. *Under review at IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2023.
- Wenqian Ye***, Yunsheng Ma*, and Xu Cao. Uncertainty Estimation in Deterministic Vision Transformer. *AAAI Workshop on Uncertainty Reasoning and Quantification in Decision Making (UDM-AAAI)*, 2022.
- Guoxuan Li, Songmao Zhang, Jiayi Wei, **Wenqian Ye**. Combining FCA-Map with representation learning for aligning large biomedical ontologies. *In International Semantic Web Conference, Workshop on Ontology Matching (ISWC)*, 2021.
- Wenqian Ye**, Fei Xu, Yaojia Huang, Cassie Huang, Ji A. Adversarial Examples Generation for Reducing Implicit Gender Bias in Pre-trained Models. *ArXiv preprint arXiv:2110.01094*, 2021.

RESEARCH EXPERIENCE

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| New York University
Courant Institute of Mathematical Sciences | Sept. 2020 – Aug. 2022 |
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- Project: Uncertainty Estimation in Deterministic Vision Transformer
 - * Proposed a regularization method, termed CoBiLiR, to solve the distance-awareness in both aspects of Lipschitzness and Contraction problems
 - * Developed a CoBiLiR self-attention based Transformer Gaussian Process (TGP) model, which integrates distance preserving hidden mappings in the transformer blocks via CoBiLiR, and GP as a distance-aware output layer for high quality uncertainty estimation
 - * Conducted experiments on the commonly-used uncertainty benchmarks and demonstrated the superiority of the proposed TGP model in prediction, calibration, and uncertainty estimation with little penalty on time complexity
 - * Completed a co-first author paper accepted at AAAI Workshop on Uncertainty Reasoning and Quantification in Decision Making (UDM-AAAI), 2023
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| New York University
Courant Institute of Mathematical Sciences | Sept. 2020 – Aug. 2022 |
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- Project: Masked Domain Adaptation (MDA): Lipschitz Regularized Masked Self-supervised Learning for Chest X-ray Domain Adaptation.
 - * Introduced Masked Domain Adaptation (MDA), a novel and robust self-supervised domain adaptation procedure with Lipschitz Regularized Self-Attention (LRSA) module for domain adaptation in chest X-ray image analysis.

- * Investigated the connection between MDA and inverse problems, and analyze the ability of the LRSA module and masked self-supervised learning strategy to learn the true data distribution.
- * Empirically evaluated MDA on two Tuberculosis classification benchmarks (Montgomery and Shenzhen datasets), and demonstrate state-of-the-art classification results compared to existing self-supervised domain adaptation methods

Chinese Academy of Sciences

Jun. 2021 – Aug. 2021

Academy of Mathematics and Systems Science

- Project: Combining FCA-Map with Representation Learning for Aligning Large Biomedical Ontologies
 - * Developed FCA-Map to utilize the Formal Concept Analysis (FCA) formalism for aligning ontologies in an incremental way.
 - * Combined FCA-Map with the representation learning technique Siamese BERT so as to take advantage of the semantic representation in numerical latent space.
 - * Evaluated our method on the OAEI 2020 LargeBio small version tasks. Our method obtains the highest recall and F-measure for FMA-NCI (92.3% and 93.9%) and FMA-SNOMED (83.1% and 87.4%)

TEACHING EXPERIENCE

CSCI-GA. 2590 Natural Language Processing

Sept. 2021 – Dec. 2021

Graduate Teaching Assistant, New York University

Instructor: Prof. He He

- Graded the written assignments, exams and final projects. Set up the autograder for code assignments.
- Held the 1 hour Q & A section during weekly office hours.
- Answered questions and provide guidelines for students on the online forum CampusWire

WORKING EXPERIENCE

Cirrus Logic Inc.

Jul. 2022 – Now

Embedded Software Engineer

Austin, TX

- Conduct Embedded software validation and testing for audio and haptics application – unit test design, automation, analysis, and report.
- Work on internal and customer-facing UI design and implementation System level testing for components including device driver, firmware, UI Software test automation.
- Implement DSP algorithm prototype in Python/Matlab and fixed-point firmware in C/C++.

LiveSensus

Jan. 2019 – May 2020

Co-founder

Champaign, IL

- Built a machine learning model and open-sourced dataset consisting of 30 hours of audio labeled with MOS scores for quality estimation during Vo-IP.
- Designed and developed both simulators to re-create quality degradation in videos and audios for dataset and survey launched on AWS and LiveSensus website.
- Collaborated with four other founders, Professor Sanjay Patel and a leading live streaming company, five founders selected from 40 students under *Alchemy Foundry* at UIUC *Coordinated Science Laboratory*(CSL).

SELECTED GRADUATE COURSES

Foundations of Machine Learning, New York University

Spring 2022

Convex and Non-Smooth Optimization, New York University

Spring 2022

Mathematics of Deep Learning, New York University

Spring 2022

Deep Reinforcement Learning, New York University

Fall 2021

Graphics Processing Units (GPUs), New York University

Fall 2021

Bayesian Machine Learning, New York University

Fall 2021

Advanced Machine Learning, New York University

Spring 2021

Natural Language Processing, New York University

Fall 2020

Machine Learning , University of Illinois Urbana-Champaign	Spring 2020
Distributed System , University of Illinois Urbana-Champaign	Spring 2020
Abstract Algebra , University of Illinois Urbana-Champaign	Fall 2019
Graph Theory , University of Illinois Urbana-Champaign	Fall 2019

ACADEMIC SERVICE

Reviewer of *International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, 2023
Reviewer of *The AAAI Conference on Artificial Intelligence (AAAI)*, 2023
Reviewer of *International Conference on Machine Learning (ICML)*, 2022

ACADEMIC SOCIETY AFFILIATIONS

Member of <i>Association for the Advancement of Artificial Intelligence (AAAI)</i>	2022 – Present
ACL Year-Round Mentorship Program	2021 – Present
Member of <i>Institute of Electrical and Electronics Engineers (IEEE)</i>	2018 – Present

TECHNICAL SKILLS

Programming Languages: Python, C/C++, R, MATLAB, Golang, \LaTeX
Libraries: PyTorch, PyTorch Lightning, Huggingface, Scikit-learn
Others: AWS, CUDA, MySQL, Git, Jenkins