Enyi(Olivia) Jiang

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EDUCATION

University of Illinois at Urbana-Champaign — 3.91/4.00
Master of Science in Computer Science (with thesis) — *2020 - 2023*

- Advisor: Prof. Sanmi Koyejo
- Thesis topics: federated learning, domain adaptation, healthcare

University of Illinois at Urbana-Champaign — 3.94/4.00
Bachelor of Science in Computer Engineering — *2016 - 2020*

Zhejiang University — 3.95/4.00
Bachelor of Engineering in Electronics and Computer Engineering — *2016 - 2020*

RESEARCH INTERESTS

I am interested in data heterogeneity, optimization, and security aspects of distributed machine learning for healthcare applications (e.g. biomedical imaging), with a recent focus on the federated domain adaptation (FDA) problem both empirically and theoretically.

SELECTED PROJECTS

Federated Domain Adaptation (FDA) for Healthcare — Urbana-Champaign, Illinois
Research Assistant under supervision of Prof. Sanmi Koyejo — *2022 - Now*

- Leverage demographic information as auxiliary tasks to improve domain adaptation performance for COVID-19 medical imaging dataset **MIDRC** for both centralized and federated settings
- Propose a novel gradient projection method by extracting the valuable components of model updates from source clients towards the target client, significantly improve FDA performance
- Our proposed framework outperforms the state-of-the-art unsupervised FDA methods with limited additional time and space complexity on various healthcare datasets
- **First-authored** paper is submitted to **ICLR 2023**, currently working on the theoretical foundation for weakly-supervised FDA problem

Clustered Federated Learning — Urbana-Champaign, Illinois
Research Assistant under supervision of Prof. Sanmi Koyejo — *2021 - 2022*

- Perform data poisoning attacks on clustered federated system FESEM and verify its vulnerabilities, implement and apply geometric median robust defense
- Design two-level federated clustering architecture for better personalization with non-iid distributions

Bio Text Mining — Urbana-Champaign, Illinois
Data Mining Group at Computer Science Department, UIUC — *2019 - 2020*

- Participate in building a biomedical named entity recognition (BioNER) system, aiming to tag words concerning 17 specific types (such as chemical, and disease) for biochemical paper abstracts
- Leverage GMM model and design a knowledge-based raw text selection algorithm to refine the expansion results
- Co-authored paper accepted to **ACL 2020**

PUBLICATIONS

- **Enyi Jiang**, Oluwasanmi O Koyejo. *Weakly-Supervised Domain Adaptation in Federated Learning for Healthcare*, in submission to ICLR 2023. (PDF)

- **Enyi Jiang**, Haisong Zhang. *A New Coarse and Fine-grained Chinese Word Segmentation Benchmark.*(2022). No.CN202210157392.7 (Chinese Patent)

- Xuan Wang, Yingjun Guan, Weili Liu, Aabhas Chauhan, **Enyi Jiang**, Qi Li, David Liem, Dibakar Sigdel, John Caufield, Peipei Ping and Jiawei Han, *EVIDENCEMINER: Textual Evidence Discovery for Life Sciences*, in Proc. 2020 Annual Conf. of the Association for Computational Linguistics (ACL 2020), (PDF) (System demo), Seattle, WA, July 2020

- Shirui Luo, Jiahuan Cui, Madhu Vellakal, Jian Liu, **Enyi Jiang**, Seid Koric, Volodymyr Kindratenko. (2019). *Review and Examination of Input Feature Preparation Methods and Machine Learning Models for Turbulence Modeling.* (PDF)

INTERNSHIPS

NLP Intern   Shenzhen, Guangdong
Tencent AI Lab   *2021*

- Topic: Chinese word segmentation (CWS) benchmark. 1st author of the patent.

- Propose new coarse and fine-grained CWS labeling standards, a dataset consisting hard cases and extensive domains, and filtered/cleaned Chinese word embeddings.

AWARDS

- Second place in UIUC Ashby Prize in Computational Science Hackathon (news)	*May 2022*
- Graduate with Highest Honors of ECE Department at UIUC	*July 2020*
- Outstanding Graduates of Zhejiang University	*July 2020*
- Summer 2019 SPIN Intern Completion with Recognition Letter (link)	*July 2019*
- Dean's List of UIUC	*Mar 2019*
- Meritorious Winner of Mathematical Contest In Modeling (certificate) (paper)	*Mar 2018*
- Academic First-Class Scholarship of ZJU-UIUC Institute (RMB 60,000)	*2017, 2018*
- First-Class Student Award of Zhejiang University	*Nov 2017*

TEACHING

- **CS 448**: Natural Language Processing, *Teaching Assistant*   Fall 2021

- **CS 361**: Probability and Statistics for Computer Science, *Teaching Assistant*   Fall 2020

- **CS 225**: Data Structures, *Teaching Assistant*   Spring 2020

- **Math 213**: Discrete Mathematics, *Teaching Assistant*   Fall 2019

REVIEWING AND SERVICE

- **Reviewer**: ICML Workshop on Adversarial Machine Learning Frontiers   2022

SKILLS

- **Programming Languages**: Python, C, C++, R, SystemVerilog, Matlab, Java