

XIAOLONG LUO (AARON)

Tel: +1 617-909-8782 | E-mail: xiaolongluo@g.harvard.edu | Web: Homepage

Google Scholar | LinkedIn | Last update: October 2025

EDUCATION

Harvard University Ph.D. Candidate in Engineering Science	Cambridge, Massachusetts Sep. 2022 – Present
Harvard University S.M. in Computer Science	Cambridge, Massachusetts Sep. 2022 – May 2025
University of Science and Technology of China Bachelor of Science in Statistics	Anhui, China Sep. 2018 – Jun. 2022

RESEARCH INTERESTS

My ultimate research goal is to develop the *foundations* of next-generation artificial intelligence to enhance AI's effectiveness and practical applications in healthcare. My research interests focus on the following key directions:

- **Flexible Diagnostic Models with Multi-task and Multi-modal Learning.** I work on developing advanced AI models that can simultaneously handle multiple diagnostic tasks while effectively integrating various types of medical data (imaging, clinical notes, lab results) to provide more comprehensive and accurate medical assessments.
- **Evaluating and Enhancing LLM Reasoning in Real-World Medical Settings.** I work on developing evaluation frameworks and benchmarks to assess and improve how large language models reason over complex, temporally extended medical data. My goal is to enhance their fidelity, calibration, and robustness, ultimately enabling trustworthy and generalizable clinical AI systems.

PUBLICATIONS

- [4] **The CRITICAL Records Integrated Standardization Pipeline (CRISP): End-to-End Processing of Large-scale Multi-institutional OMOP CDM Data**
Xiaolong Luo, Michael Lingzhi Li
ML4H 2025 (spotlight talk), Dec. 2025
- [3] **Towards Interpretable, Sequential Multiple Instance Learning: An Application to Clinical Imaging**
Xiaolong Luo, Hsin-Hsiao Scott Wang, Michael Lingzhi Li
AMIA Annual Symposium, Nov. 2025
- [2] **AI Transformers for Radiation Dose Reduction in Serial Whole-Body PET Scans**
YR Wang, L Qu, ND Sheybani, X Luo, J Wang, KE Hawk, AJ Theruvath, ...
Radiology: Artificial Intelligence (IF: 22.5), Apr. 2023
- [1] **Learning Pruning-Friendly Networks via Frank-Wolfe: One-Shot, Any-Sparsity, and No Retraining**
Miao Lu*, Xiaolong Luo*, Tianlong Chen, Wuyang Chen, Dong Liu, Zhangyang Wang
ICLR (Spotlight), Virtual, Mar. 2022

RESEARCH EXPERIENCES

AI for Healthcare Applications Advisors: Prof. Michael Lingzhi Li (HBS, Harvard), Prof. Scott Wang (HMS)	Harvard, May 2023 – Present
Online Spike Sorting Advisor: Prof. Jia Liu (SEAS, Harvard)	Harvard, Oct. 2022 – Feb. 2023
Learning Pruning-Friendly Networks via Frank-Wolfe Advisor: Prof. Zhangyang Wang (ECE, UT Austin)	UT Austin, May 2021 – Oct. 2021
PET/MRI Image Super-Resolution Program Advisor: Dr. Joyce Wang (Stanford AIMI)	Stanford & USTC, Feb. 2021 – Apr. 2022

INVITED TALKS

Towards Interpretable, Sequential Multiple Instance Learning: An Application to Clinical Imaging
INFORMS Annual Meeting, Seattle; AMIA Annual Symposium 2025, Atlanta

2024

ACADEMIC SERVICES

Conference Reviewer

CVPR 2026, ICLR (2025; 2026), NeurIPS 2025 Workshops (Imageomics; GenAI4Health), ML4H 2025

Journal Reviewer

Pattern Recognition

TEACHING ASSISTANT

ENG-SCI 139/239: Innovation in Science and Engineering (Teaching Fellow)

Fall 2025

Instructor: Prof. David Ricketts; Class size: 113

COMPSCI 1090B: Data Science 2: Advanced Topics in Data Science (Teaching Fellow)

Spring 2025

Instructors: Prof. Pavlos Protopapas (SEAS) & Natesh Pillai (Statistics); Class size: 277

NEURO 240: Biological and Artificial Intelligence (Teaching Fellow)

Spring 2025

Instructor: Prof. Gabriel Kreiman; Class size: 142

AM101: Statistical Inference for Scientists and Engineers (Head TF)

Spring 2024

Instructor: Prof. Rob Howe; Class size: 55

CS 182: Artificial Intelligence

Fall 2023

Instructors: Prof. Stephanie Gil; Prof. Milind Tambe (Harvard SEAS); Class size: 138

Stat 139: Introduction to Linear Models

Fall 2023

Instructor: Prof. James Xenakis (Harvard GSAS); Class size: 83

Probability Theory and Mathematical Statistics

Fall 2021

Instructor: Prof. Canwen Hong (Applied Math, USTC); Class size: 97

Differential Equation I

Fall 2020

Instructor: Prof. Wuqing Ning (Applied Math, USTC); Class size: 156

EXTRACURRICULAR ACTIVITIES & INTERESTS

Co-director of the Harvard GSAS Entrepreneur Club, AI Community

Sep. 2023 – Sep. 2024

Led initiatives to foster entrepreneurship and AI-focused projects within the Harvard GSAS community.

Founding Member of FutureX

Jul. 2022 – Jan. 2023

Established a web3 community, winning the second prize in "H-InnoPitch" and securing pre-seed funding; selected for MiraclePlus 22 Fall Accelerator.

CYDP Program (Columbia Young Development Program)

Columbia University, Jan. 2019 – Feb. 2019

Led a team to win a business plan competition after completing courses in business analytics and machine learning.

AWARDS AND HONORS

The 41st Guo Moruo Scholarship (top 1%, highest honor at USTC)

2021

Outstanding Student Scholarship, Golden award (top 5%)

2020

National Scholarship (top 1%, from Ministry of Education of China)

2019

Chinese Mathematics Competitions, Anhui, The Second Prize

2019

SKILLS

Programming Languages: Python, C/C++, R, HTML, JavaScript

Frameworks & Tools: PyTorch, TensorFlow, PyG, scikit-learn, OpenCV, React, Git, Docker, Linux, Figma

Languages: English, Mandarin