

# XIAOLONG LUO (AARON)

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Google Scholar | LinkedIn | Last update: October 2025

## EDUCATION

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

## RESEARCH INTERESTS

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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

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- [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

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

## INVITED TALKS

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

2024

## ACADEMIC SERVICES

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### Conference Reviewer

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

### Journal Reviewer

Pattern Recognition

## TEACHING ASSISTANT

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

Instructor: Prof. David Ricketts; Class size: 113

Fall 2025

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

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

Spring 2025

### NEURO 240: Biological and Artificial Intelligence (Teaching Fellow)

Instructor: Prof. Gabriel Kreiman; Class size: 142

Spring 2025

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

Instructor: Prof. Rob Howe; Class size: 55

Spring 2024

### CS 182: Artificial Intelligence

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

Fall 2023

### Stat 139: Introduction to Linear Models

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

Fall 2023

### Probability Theory and Mathematical Statistics

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

Fall 2021

### Differential Equation I

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

Fall 2020

## EXTRACURRICULAR ACTIVITIES & INTERESTS

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### 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

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**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

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

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

**Languages:** English, Mandarin