

# XIAOLONG LUO (AARON)

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Google Scholar | LinkedIn | Last update: June 2025

## EDUCATION

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

## 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.
- **Democratizing Healthcare Access through AI Agents.** I am dedicated to developing intelligent healthcare agents that make medical resources and consultations more accessible and convenient for everyone. This includes creating AI systems that can provide preliminary medical advice, assist in resource allocation, and bridge the gap between patients and healthcare providers.

## PUBLICATIONS

- [3] **Towards Interpretable, Sequential Multiple Instance Learning: An Application to Clinical Imaging**  
Xiaolong Luo, Hsin-Hsiao Scott Wang, Michael Lingzhi Li  
*AMIA*, 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

<b>AI for Healthcare Applications</b> Advisors: Prof. Michael Lingzhi Li (HBS, Harvard), Prof. Scott Wang (HMS)	<i>Harvard, May 2023 – Present</i>
<b>Online Spike Sorting</b> Advisor: Prof. Jia Liu (SEAS, Harvard)	<i>Harvard, Oct. 2022 – Feb. 2023</i>
<b>Learning Pruning-Friendly Networks via Frank-Wolfe</b> Advisor: Prof. Zhangyang Wang (ECE, UT Austin)	<i>UT Austin, May 2021 – Oct. 2021</i>
<b>PET/MRI Image Super-Resolution Program</b> Advisor: Dr. Joyce Wang (Stanford AIMI)	<i>Stanford &amp; USTC, Feb. 2021 – Apr. 2022</i>
<b>Neural Tangent Kernel &amp; Neural Network Compression</b> Advisors: Prof. Richard Xu (Univ. of Technology Sydney), Prof. Weiping Zhang (USTC)	<i>UTS &amp; USTC</i>

## INVITED TALKS

## ACADEMIC SERVICES

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**Conference Reviewer**  
ICLR 2025

## TEACHING ASSISTANT

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<b>COMPSCI 1090B: Data Science 2: Advanced Topics in Data Science</b> (Teaching Fellow) Instructors: Prof. Pavlos Protopapas (SEAS) & Natesh Pillai (Statistics); Class size: 277	<i>Spring 2025</i>
<b>NEURO 240: Biological and Artificial Intelligence</b> (Teaching Fellow) Instructor: Prof. Gabriel Kreiman; Class size: 142	<i>Spring 2025</i>
<b>AM101: Statistical Inference for Scientists and Engineers</b> (Head TF) Instructor: Prof. Rob Howe; Class size: 55	<i>Spring 2024</i>
<b>CS 182: Artificial Intelligence</b> Instructors: Prof. Stephanie Gil; Prof. Milind Tambe (Harvard SEAS); Class size: 138	<i>Fall 2023</i>
<b>Stat 139: Introduction to Linear Models</b> Instructor: Prof. James Xenakis (Harvard GSAS); Class size: 83	<i>Fall 2023</i>
<b>Probability Theory and Mathematical Statistics</b> Instructor: Prof. Canwen Hong (Applied Math, USTC); Class size: 97	<i>Fall 2021</i>
<b>Differential Equation I</b> Instructor: Prof. Wuqing Ning (Applied Math, USTC); Class size: 156	<i>Fall 2020</i>

## EXTRACURRICULAR ACTIVITIES & INTERESTS

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<b>Co-director of the Harvard GSAS Entrepreneur Club, AI Community</b> Led initiatives to foster entrepreneurship and AI-focused projects within the Harvard GSAS community.	<i>Sep. 2023 – Sep. 2024</i>
<b>Member of the Student Union of USTC</b> Participated in organizing student events and representing student interests at USTC.	<i>Sep. 2018 – Mar. 2020</i>
<b>Founding Member of FutureX</b> Established a web3 community, winning the second prize in "H-InnoPitch" and securing pre-seed funding; selected for MiraclePlus 22 Fall Accelerator.	<i>Jul. 2022 – Jan. 2023</i>
<b>CYDP Program (Columbia Young Development Program)</b> Led a team to win a business plan competition after completing courses in business analytics and machine learning.	<i>Columbia University, Jan. 2019 – Feb. 2019</i>

## AWARDS AND HONORS

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<b>The 41st Guo Moruo Scholarship</b> (top 1%, highest honor at USTC)	<i>2021</i>
<b>Outstanding Student Scholarship, Golden award</b> (top 5%)	<i>2020</i>
<b>National Scholarship</b> (top 1%, from Ministry of Education of China)	<i>2019</i>
<b>Chinese Mathematics Competitions, Anhui, The Second Prize</b>	<i>2019</i>

## SKILLS

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**Languages:** C, Python, R, HTML, React, Javascript, Typescript  
**Frameworks:** PyTorch, TensorFlow, PyG  
**Tools:** Mathematica, L<sup>A</sup>T<sub>E</sub>X, Git  
**Languages:** English, Mandarin