

Fangxu Xing, Ph.D.

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EDUCATION

Harvard University, *Harvard Medical School*

Boston, MA

- *Postdoctoral*: Computer Vision/Machine Learning in Medical Imaging, Department of Radiology

2016–2018

Johns Hopkins University, *Whiting School of Engineering*

Baltimore, MD

- *Ph.D. and M.S.E.*: Electrical and Computer Engineering, Mentor: Jerry L. Prince

2009–2015

Tsinghua University, *School of Science*

Beijing, China

- *Bachelor of Science*: Fundamental Mathematics, Computer Science, and Engineering, GPA 3.9

2005–2009

WORK EXPERIENCE

Harvard University, Harvard Medical School, Massachusetts General Hospital

Boston, MA

Assistant Professor, Principal Investigator in AI/ML-Powered Healthcare

2018–Present

- Leading a research group specializing in AI machine learning applications with healthcare data and computer vision; co-investigated **10 NIH-funded and 5 industry-funded research projects**
- Developing novel **deep learning algorithms for medical image analysis** tasks, integrating state-of-the-art technologies such as GenAI and LLMs for tasks such as synthesis, classification, segmentation, diagnosis, and disease detection
- Selected algorithms of innovation: 1) a dynamic synthesis network that **generates cardiac MRI videos in motion using only one static image frame**; 2) a tracking method to **capture temporal tissue deformation** from dynamic image sequences; 3) an atlas construction scheme to **aggregate multimodal data for disease prediction**; 4) an inpainting algorithm to **reconstruct missing anatomical details in MRI images**; 5) a multimodal synthesis scheme to **generate dynamic vocal tract videos from simple speech audio waveforms**
- Producing, editing, and overseeing the production of research reports including journal articles, conference proceedings, abstracts, grant reports, live presentations, etc.
- Published **93 peer-reviewed research papers** (18 first-authored), 29 non-peer-reviewed proceedings, and 33 conference abstracts; H-index: 25
- Mentored 40+ students, researchers, and peers on collaborative projects, supporting their careers in research and technological innovation
- Coordinating seamlessly with multiple external institutions to **develop collaborative projects**, such as University of British Columbia, Phantomics Inc., University of Illinois Urbana-Champaign, DeepShare Inc., etc.
- Regularly **delivering public seminars and presentations** in local (many), national (15), and international (12) venues
- Chairing and moderating scientific conferences (SPIE medical Imaging, ISBI, MICCAI, MTSAIL, IPMI, etc.)
- Performing regular review duties for scientific publications for multiple conferences (8) and journals (30+)
- Serving as editor for scientific conference proceedings (MTSAIL)
- **Hosting the annual course *Imaging Sciences and Applications*** at the Harvard-MIT Health Sciences and Technology (HST) joint institute, teaching AI fundamentals and ML algorithms to graduate students
- **Accumulated 8,000+ hours of teaching** and mentoring
- Supervising a team of one MRI technician and two research faculty for the curation of dynamic MRI data

Interview Kickstart LLC.

Online

Instructor, Advanced Machine Learning and AI Switch-up Courses

2023–Present

- Hosting **weekly machine learning online courses**: an introductory switch-up course and an advanced deep-dive course
- Conducting one 5-hour online teaching session, one 2-hour coding session, and one 1-hour Q&A session per topic
- Engaging with learners live, addressing queries while balancing learner interaction and course efficiency with groups of 30-50 participants
- Performing quarterly performance analyses to assess and improve learner outcomes
- **Performing interview coaching** to help learners transitioning into an AI/machine learning engineering career
- **Personally coached 2000+ students** in live cohorts, primarily from tech backgrounds without prior AI/ML knowledge
- Maintained high class rating (an **anonymous 4.8/5 average rating**) from weekly cohorts of global online learners
- Received the **Highest Rated Instructor award** by the company in 2024 and 2025

- Contributed to the development process of cutting-edge teaching materials to ensure relevance in a fast-evolving industry
- Spearheaded coding content development for Python live coding training projects
- Pioneered effective classroom management strategies for the company to enhance customer satisfaction

DeepShare Inc.

Mentor, Research and Publication in Deep Learning and Computer Vision in Medical Science

Online

2023-Present

- Mentoring self-sponsored college, graduate, and post-graduate researchers in algorithm development for paper publication
- Identifying and assigning cutting-edge computer vision projects to students based on their backgrounds and expertise
- Recognizing knowledge gaps in students, defining research questions and hypotheses, and guiding students on conducting literature search, data curation, algorithm innovation, dataset adaptation, evaluation and comparison, and paper writing
- Overseeing the development and publication processes for projects: plan, maintain, and review year-long schedule
- Supervising student weekly progress; directing and refining research flow
- Successfully **produced seven research journals** (four published, three under review)
- Selected projects: 1) **segmentation**-based bone marrow lesion detection; 2) vision transformer-based dynamic **image-to-audio synthesis**; 3) diffusion model-enhanced **cause-of-death classification** for AI-powered autopsy

SKILLS

- **Coding Languages:** Python, C++, SQL, MATLAB, R
- **Editing:** LaTeX, MS Office, LLM tools
- **DevOps:** Linux, Git, Jupyter, Tableau
- **AI/ML Fields:** deep learning, signal processing, image analysis, data science, statistics, applied mathematics, teaching and mentorship, medical imaging, MRI, technical writing, NLP, CNN, GenAI, LLM, transformers, ViTs, diffusion models
- **AI/ML Toolboxes:** Hugging Face, Pandas, NumPy, scikit-learn, PyTorch, TensorFlow, OpenCV, MONAI, LangChain
- **Languages:** English (professional), Chinese (native), Japanese (proficient)

AWARDS AND HONORS

- Ranked #1 as the topmost scorers in Qingdao City (out of 52,000 participants) in the 2005 China National College Entrance Exam
- Awarded student fellowship in both Tsinghua University and Johns Hopkins University
- Won best paper in MICCAI (2013), SPIE Medical Imaging (2015), and CMB (2016) conferences
- Won deep dive research prizes in SPIE Medical Imaging 2022 and 2023
- Won Highest Rated Instructor awards at Interview Kickstart LLC. in 2024 and 2025
- Won Sadaoki Furui Prize for best paper in IEEE APSIPA conference in 2025

ADDITIONAL INFORMATION

- **Personal Page:** connects.catalyst.harvard.edu/Profiles/display/Person/144942/
- **Scholar Page:** scholar.google.com/citations?user=vXq6jPgAAAAJ
- **Publications:** please refer to personal and scholar pages