Huiyu Li

huiyu-li.github.io

EDUCATION

Ph.D. of Computer Science, INRIA - Sophia Antipolis *2021 - 2024*
- Thesis: Data Exfiltration and Anonymization of Medical Images based on **Generative Models** *France*
- Advisors: Hervé Delingette, Nicholas Ayache

Master of Computer Science, Beijing Institute of Technology (BIT) *2018 - 2021*
- Thesis: Deep Learning-based Segmentation of Small Liver Tumors in CT Images *China*

Bachelor of Computer Science, Qufu Normal University (QNU) *2014 - 2018*
- GPA: 90.57/100 (Top 1/126) *China*

RESEARCH EXPERIENCE

Radiology, University of Cambridge *2026.01 - now*
Research Associate *UK*
- Develop a comprehensive data-sharing platform for randomized medical imaging trials.
- Develop geometry-aware AI models for cardiovascular disease diagnosis, monitoring, and treatment planning.

Epione Team, INRIA - Sophia Antipolis *2025.05 - 2025.12*
Research Engineer *France*
- Developing deep learning models to predict future lung cancer risk from a single LDCT.

Epione Team, INRIA - Sophia Antipolis *2021.09 - 2024.12*
PhD Student *France*
- Proposed a **Data Exfiltration by Compression** attack leveraging learned image compression techniques.
- Introduced a two-stage solution for medical image anonymization: latent code projection and optimization.
- Initiated a new research direction on **Generative Medical Image Anonymization** within the lab.

United Imaging Healthcare *2021.01 - 2021.08*
Research Engineer *China*
- Explored multitask deep learning for segmentation and classification of primary bone tumors in spinal CT scans.

Xu Lab, Carnegie Mellon University *2020.05 - 2020.11*
Research Intern *US*
- Explored deep learning-based segmentation of Cellular Electron Cryo-Tomograms.

Beijing Lab of Intelligent Information Technology, BIT *2018.09 - 2021.07*
Master Student *China*
- Developed a deep distance map regression network for imbalanced liver tumor segmentation.
- Proposed a novel three-stage curriculum learning framework for effective segmentation of small liver tumors.

Intelligent Computing Laboratory, QNU *2014.09 - 2018.07*
Student Intern *China*
- Principal investigator for the Undergraduate Student Innovation and Entrepreneurship Training Program.
- Developed an improved Particle Swarm Optimization method for colorectal cancer prediction.

PUBLICATIONS

Conference Papers (6)

1. Elie Thellier, **Huiyu Li**, Nicholas Ayache, Hervé Delingette. High-Capacity Robust Medical Image Exfiltration via Neural Network Weight Replacement. International Conference on Medical Image Computing and Computer-Assisted Intervention (MICCAI), 2026.
2. **Huiyu Li**, Nicholas Ayache, Hervé Delingette. Generative Medical Image Anonymization Based on Latent Code Projection and Optimization. IEEE 22nd International Symposium on Biomedical Imaging (ISBI), 2025.
3. **Huiyu Li**, Nicholas Ayache, Hervé Delingette. Data Stealing Attack on Medical Images: Is It Safe to Export Networks from Data Lakes? The 3rd MICCAI Workshop on Distributed, Collaborative, and Federated Learning (DeCaF), 2022. (**Best Paper Award**)
4. **Huiyu Li**, Xiabi Liu, Said Boumaraf, Xiaopeng Gong, Donghai Liao, Xiaohong Ma. Deep Distance Map Regression Network with Shape-aware Loss for Imbalanced Medical Image Segmentation. International Workshop on Machine Learning in Medical Imaging (MLMI), 2020.
5. **Huiyu Li**, Xiabi Liu, Said Boumaraf, Weihua Liu, Xiaopeng Gong, Xiaohong Ma. A New Three-stage Curriculum Learning Approach to Deep Network based Liver Tumor Segmentation. International Joint Conference on Neural Networks (IJCNN), 2020.
6. **Huiyu Li**, Sheng-Jun Li, Junliang Shang, Jin-Xing Liu, Chun-Hou Zheng. An Improved Particle Swarm Optimization with Dynamic Scale-Free Network for Detecting Multi-Omics Features. International Symposium on Bioinformatics Research and Applications (ISBRA), 2018.

Journal Articles (2)

7. **Huiyu Li**, Nicholas Ayache, Hervé Delingette. Data Exfiltration by Compression Attack: Definition and Evaluation on Medical Image Data. Machine Learning for Biomedical Imaging, 2025.
8. **Huiyu Li**, Sheng-Jun Li, Junliang Shang, Jin-Xing Liu, Chun-Hou Zheng. A Dynamic Scale-Free Network Particle Swarm Optimization for Extracting Features on Multi-Omics Data. Journal of Computational Biology, 2018.

Patents (4)

9. Weihua Liu, Xiabi Liu, **Huiyu Li**. Method for Image Recognition based on Structured Natural Gradient Descent Optimization. CHN patent, 2022.
10. Xiabi Liu, Xi Liu, **Huiyu Li**. Method for Image Co-segmentation based on Dense Siamese U-Net with Edge Enhanced 3D IoU Loss. CHN patent, 2021.
11. Xiabi Liu, Weihua Liu, **Huiyu Li**. Method for Lung Parenchyma Segmentation and Nodule Detection based on Multi-Task Learning. CHN patent, 2020.
12. Xiabi Liu, Weihua Liu, **Huiyu Li**. Method for GGO Detection in 3D lung CT images based on Pyramid Input Augmented Multi-scale CNN, CHN patent, 2019.

PRESENTATIONS

International Symposium on Biomedical Imaging (ISBI), Huston, USA	*2025*
3IA Côte d'Azur Annual Scientific Conference, France	*2022, 2023*
Medical Image Computing and Computer Assisted Intervention (MICCAI) conference, Singapore	*2022*
Medical Image Computing and Computer Assisted Intervention (MICCAI) virtual conference	*2020*
The International Joint Conference on Neural Networks (IJCNN) virtual conference	*2020*
The International Symposium on Bioinformatics Research and Applications (ISBRA), China	*2018*

ACADEMIC SERVICE

Organizer of PhD seminars of INRIA *2021 - 2022*

Organizer of the 6th MOMI (Le Monde des Mathématiques Industrielles) workshop, INRIA *2022*

Reviewer of the TIFS (IEEE Transactions on Information Forensics and Security), MIDL 2025-2026 (Medical Imaging with Deep Learning)

AWARDS AND HONORS

Excellent Graduate Award, Provincial Level *2018*

Excellent Bachelor Thesis, QNU *2018*

First Prize of China Undergraduate Mathematical Contest in Modeling, Provincial Level *2017*

First Prize of Creative Challenge Competition, QNU *2017*

National Scholarship, QNU (Top 1%) *2015-2017*

Excellent Student Award, QNU (Top 1%) *2014-2016*

TEACHING AND MENTORING

Teaching Assistant

Introduction to Medical Image Analysis, Master course, INRIA *2022*

Artificial Intelligence, Undergraduate international student course, BIT *2019*

Mentorship

Thesis Advisor for one INRIA PhD student *2025*

Thesis Advisor for two BIT undergraduates *2019, 2020*

Mentor for six BIT undergraduates in medical image segmentation *2018-2021*

SKILLS

Computer: Python, Pytorch, Tensorflow, MATLAB, Ubuntu

Language: English, Chinese

Hobbies: Gardening, Skiing, Badminton, Writing, Ukulele

REFERENCES

Hervé Delingette, Research Director, Epione Team, INRIA, Sophia Antipolis, France. Herve.Delingette@inria.fr

Nicholas Ayache, Research Director, Epione Team, INRIA, Sophia Antipolis, France. Nicholas.Ayache@inria.fr

Xiabi Liu, Professor, School of Computer Science, Beijing Institute of Technology, Beijing, China. LiuXiabi@bit.edu.cn