# Huiyu Li

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## 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

**Epione Team, INRIA - Sophia Antipolis**                                *2025.5 - now*
Research Engineer                                                          *France*
- Developing deep learning models to predict future lung cancer risk from a single LDCT.

**Epione Team, INRIA - Sophia Antipolis**                            *2021.9 - 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**                                        *2021.5 - 2021.8*
Research Intern                                                            *China*
- Explored multitask deep learning for segmentation and classification of primary bone tumors in spinal CT scans.

**Xu lab, Carnegie Mellon University**                              *2020.5 - 2020.11*
Research Intern                                                              *US*
- Explored deep learning-based segmentation of Cellular Electron Cryo-Tomograms.

**Beijing Lab of Intelligent Information Technology, BIT**            *2018.9 - 2021.7*
Master Student                                                             *China*
- Developed a deep distance map regression network to address the class imbalance issue in liver tumor segmentation.
- Proposed a novel three-stage curriculum learning framework for effective segmentation of small liver tumors.

**Intelligent Computing Laboratory, QNU**                            *2014.9 - 2018.7*
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 (5)**

1. **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.

2. **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**)

3. **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.

4. **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.

5. **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)**

6. **Huiyu Li**, Nicholas Ayache, Hervé Delingette. Data Stealing Attack: Definition and Evaluation on Medical Image Data Lakes. 2025. (Under Review)

7. **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)**

8. Weihua Liu, Xiabi Liu, **Huiyu Li**. Method for Image Recognition based on Structured Natural Gradient Descent Optimization. CHN patent, 2022.

9. 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.

10. Xiabi Liu, Weihua Liu, **Huiyu Li**. Method for Lung Parenchyma Segmentation and Nodule Detection based on Multi-Task Learning. CHN patent, 2020.

11. 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

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| 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

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| **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 (Medical Imaging with Deep Learning) | |

# AWARDS AND HONORS

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| **Excellent Graduate Award**, Provincial Level | *2018* |

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| **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** (Top 1%) | *2015-2017* |
| **Excellent Student Award**, QNU (Top 1%) | *2014-2016* |

## TEACHING AND MENTORING

**Teaching Assistant**

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|---|---|
| *Introduction to Medical Image Analysis*, Master course, INRIA | *2022* |
| *Artificial Intelligence*, Undergraduate international student course, BIT | *2019* |

**Mentorship**

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| Thesis Advisor for two BIT undergraduates | *2019, 2020* |
| Mentor for 6 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