NING BI

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EDUCATION

University of Leeds **Leeds UK**
Ph.D in Computer Science, School of Computing *Sept. 2019 - (expected) Sept. 2023*
Advisor: Prof. Alejandro F Frangi, Dr. Zeike Taylor
Thesis: Bayesian Deep Atlases for Cardiac Motion Modelling and Abnormality Detection from Cardiac cine-MRI.

ShanghaiTech University **Shanghai China**
BSc in Computer Science (1st Class Hornors), School of Information Science and Technology *Sept. 2015 - July. 2019*
Advisor: Prof. Shenghua Gao

RESEARCH INTERESTS

Sequential data modeling and analysis, **Generative models**, Probabilistic motion modeling, Anomaly detection, Cardiac image analysis (segmentation, registration, and medical indices inference), Medical image analysis, Computer Vision, Deep Learning.

WORK EXPERIENCE

Teaching Assistant *University of Leeds* **Leeds UK**
· Artificial Intelligence, Machine Learning, Programming for Data Science. *Mar. 2020 - Present*
Research Internship *YOKE Intelligence* **Shanghai China**
· Computer vision algorithm internship on Multi-view Object Tracking & Re-identification. *Sept. 2018 - July. 2019*
Research Assistant *ShanghaiTech University* **Shanghai China**
· Research internship on DL-based object detection projects at SVIP Lab lead by Prof Gao. *Mar. 2018 - Jun. 2019*
Teaching Assistant *ShanghaiTech University* **Shanghai China**
· Teaching assistant of CS172 Computer Vision. *Sept. 2018 - Dec. 2018*

RESEARCH EXPERIENCE

Cardiac Motion Modelling and Abnormality Detection from Cardiac cine-MRI *Sept. 2020 - Present*
Ph.D. Project, University of Leeds

In this research, I model the heart motion in a cardiac cycle through sequences of cardiac cine-MRI. The cardiac motion, in the meantime, is embedded probabilistically in the latent space and collaborates the motion prediction and position-wise anomaly detection in parallel.

Generating Biofilm Textures from Optical Coherence Tomography Scans *Jan. 2023*
Data Study Groups, Alan Turing Institute

In this DSG event, we cope with real-world data provided by AkzoNobel. We conducted a systematic analysis of the data provided and exploited a GANs-based model to generate diverse biofilm textures while preserving its structural properties.

Weakly Supervised Cardiac Segmentation via Recurrent VAE *Sept. 2019*
Provisional Ph.D. Project, University of Leeds

I exploited temporal and spatial recurrent features to reach a self-supervised cardiac segmentation approach.

Line-segments Detection in Man-made Structural Space *Jun. 2018*
Research Internship, ShanghaiTech University

We proposed an encoder-decoder-based end-to-end framework to extract wire-frame structures in man-made space.

SIST Rambler Robot *Nov. 2017*
Course Project(CS283/CS284 Robotics/SLAM), ShanghaiTech University

Propose a key-frame based SLAM algorithm and extend it to a robot with two oriented Velodyne LIDARs.

PUBLICATIONS

* denotes equal contribution.

GSMorph: Gradient Surgery for Hyperparamer-free Deformable Registration in Cardiac MRI *Mar. 2023*
Haoran Dou, **Ning Bi***, Alejandro F.Frangi*

Early accepted by **Medical Image Computing and Computer Assisted Intervention (MICCAI) 2023**

cMT-VAE: Content Conditioned Variational Model for Cardiac cine-MRI Motion Transfer *Mar. 2023*
***Ning Bi**, Kang Zhou, Arezoo Zakeri, Zeike Tylor, Alejandro F.Frangi*

Submitted to **Medical Image Computing and Computer Assisted Intervention (MICCAI) 2023**

SegMorph: Concurrent Segmentation and Motion Estimation for CMR Sequences *Oct. 2022*
***Ning Bi**, Arezoo Zakeri, Yan Xia, Alejandro F.Frangi*

Under review by **IEEE Transactions on Medical Imaging (TMI)**

DragNet: learning-based deformable registration for realistic cardiac MR sequencegeneration from a single frame *Jul. 2022*
Arezoo Zakeri, Alireza Hokmabadi*, **Ning Bi**, Isuru Wijesinghe, Michael G. Nix, Steffen E. Petersen, Alejandro F.Frangi, Zeike A. Taylor, Ali Gooya*

Accepted by **Medical Image Analysis (MIA)**

Visual Tracking With Multiview Trajectory Prediction *Aug. 2020*
*Minye Wu, Haibin Ling, **Ning Bi**, Shenghua Gao, Qiang Hu, Hao Sheng, Jingyi Yu*

Accepted by **IEEE Transactions on Image Processing (TIP)**

PPGNet: Learning Point-Pair Graph for Line Segment Detection *Mar. 2019*
Ziheng Zhang, Zhengxin Li*, **Ning Bi**, Shenghua Gao*

Accepted by **CVF Conference on Computer Vision and Pattern Recognition (CVPR)** 2019

Multiview Vehicle Tracking by Graph Matching Model *Jun. 2019*
*Minye Wu, Guli Zhang, **Ning Bi**, Zhiru Shi*

Accepted by **CVPR** 2019 **AICity Challenge**

TECKNICAL SKILLS

Programming: Python(Pytorch, Scipy, scikit-learn, OpenCV, Pandas), LaTeX, Jupyter Notebook, MATLAB, C++.
Other tools: Google Colab, AWS, ParaView, ITK-SNAP, Docker, Git.

AWARDS AND HONORS

The Best Poster Award in University of Leeds SoC Symposium 2023 *Apr. 2023*
Honored Student Volunteer in IEEE Joint Conferences IEEE SOSE 2020 *Aug. 2020*
Reviewer of IEEE Transactions on Circuits and Systems for Video Technology *Aug. 2020*
School of Computing full-time fees and maintenance **Ph.D. Scholarship** *Sept. 2019*
The **3rd Prize** in Robomaster Central Division, Hangzhou *June. 2018*
The **Top 10 Prize** in TechCrunch Hackathon, Shanghai *Nov. 2017*
The **2nd Prize** in INESA i-Lab Hackathon, Shanghai *July. 2017*