Jinghua Zhang

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Personal Information

Gender:	Male	**Date of Birth:**	12/5/1996
Nationality:	Chinese	**Language:**	Chinese (Native) & English (IELTS: 6.5)

Education

National University of Defense Technology (NUDT[1])

Ph.D. candidate in ***Control Science and Engineering*** 09/2021- Present
Research interests: Deep Learning, Computer Vision

University of Oulu (OULU[2])

Visiting Ph.D. candidate in ***Computer Science and Engineering*** 11/2022- Present
Research interests: Deep Learning, Computer Vision

Northeastern University (NEU[3])

Master of Engineering in ***Biomedical Engineering*** 09/2018- 07/2021
Research Interests: Deep Learning, Biomedical Image Analysis
Average Score: 86/100
Outstanding Master's Thesis of NEU (1% of all students)

Hefei University (HFU)

Bachelor of Engineering in ***Automation*** 09/2014-07/2018
Average Score: 83/100
Outstanding Bachelor's Thesis of HFU

Research Projects

[1] Few-shot Class-incremental Learning

[2] Environmental Microorganism Image Segmentation Based on Deep Learning

[3] Cervical Histopathology Image Classification Based on Transfer Learning and Ensemble Learning

Publications

First Author:

[1] **Jinghua Zhang**, Chen Li, Sergey Kosov, Marcin Grzegorzek, Kimiaki Shirahama, Tao Jiang, Changhao Sun, Zihan Li and Hong Li. LCU-Net: A Novel Low-cost U-Net for Environmental Microorganism Image Segmentation [J]. **Pattern Recognition**, 115, 107885, 2021. (SCI, IF=8.518)

1: NUDT is a national key university, designated for Project 211, Project 985 and Double First Class Plan.

2: OULU is one of the largest and most multidisciplinary universities in Finland and ranks among the world's approximately 17,000 to 23,000 universities in the top 3%.

3: NEU is a national key university, designated for Project 211, Project 985 and Double First Class Plan.

[2] **Jinghua Zhang**, Chen Li and Marcin Grzegorzek. Applications of Artificial Neural Networks in Microorganism Image Analysis: A Comprehensive Review from Conventional Multilayer Perceptron to Popular Convolutional Neural Network and Potential Visual Transformer [J]. **Artificial Intelligence Review**, 2022. Online. (SCI, IF= 9.588)

[3] **Jinghua Zhang**, Chen Li, Frank Kulwa, Xin Zhao, Changhao Sun, Zihan Li, Tao Jiang, Hong Li and Shouliang Qi. A Multiscale CNN-CRF Framework for Environmental Microorganism Image Segmentation [J]. **BioMed Research International**, Article ID 4621403, 2020. (SCI, IF=3.246)

[4] Chen Li, **Jinghua Zhang**(Co-first author), Xin Zhao, Frank Kulwa, Zihan Li, Hao Xu and Hong Li. MRFU-Net: A Multiple Receptive Field U-Net for Environmental Microorganism Image Segmentation [C]. In **Information Technology in Biomedicine**, pp. 27-40, 2020. (EI, Oral Presentation)

Co-author (Partly):

[1] Frank Kulwa, Chen Li, **Jinghua Zhang**, Kimiaki Shirahama, Sergey Kosov, Xin Zhao, Hongzan Sun, Tao Jiang and Marcin Grzegorzek. A New Pairwise Deep Learning Feature For Environmental Microorganism Image Analysis [J]. **Environmental Science and Pollution Research,** 29, pp. 51909-51926, 2022. (SCI, IF= 5.19)

[2] Jiawei Zhang, Chen Li, Md Mamunur Rahaman, Yudong Yao, Pingli Ma, **Jinghua Zhang**, Xin Zhao, Tao Jiang and Marcin Grzegorzek. A Comprehensive Review of Image Analysis Methods for Microorganism Counting: from Classical Image Processing to Deep Learning Approaches [J]. **Artificial Intelligence Review**, 55(4), pp. 2875-2944, 2021. (SCI, IF= 9.588)

[3] Changhao Sun, Chen Li, **Jinghua Zhang**, Md Mamunur Rahaman, Shiliang Ai, Hao Chen, Frank Kulwa, Yixin Li, Xiaoyan Li and Tao Jiang. Gastric histopathology image segmentation using a hierarchical conditional random field [J]. **Biocybernetics and Biomedical Engineering**, 40(4), pp. 1535-1555, 2020. (SCI, IF= 5.687)

[4] Changhao Sun, Chen Li, **Jinghua Zhang**, Frank Kulwa and Xiaoyan Li. Hierarchical conditional random field model for multi-object segmentation in gastric histopathology images [J]. **Electronics Letters**, 56(15), pp. 750-753, 2020. (SCI, IF= 1.202, Feature Article)

[5] Jiawei Zhang, Chen Li, Md Mamunur Rahaman, Yudong Yao, Pingli Ma, **Jinghua Zhang**, Xin Zhao, Tao Jiang and Marcin Grzegorzek. A Comprehensive Survey with Quantitative Comparison of Image Analysis Methods for Microorganism Biovolume Measurements [J]. **Archives of Computational Methods in Engineering**, Online first, 2020. (SCI, IF=8.171)

Patents:

[1] 一种多尺度串行的卷积深度学习显微图像分割方法

Patent Number: ZL201910533172.8

Chinese Software Copyrights:

[2] Educational Software for Image Preprocessing Demonstration
Register Number: 2019SR0102261

[3] Software for Calculation and Visualization of Image Segmentation Evaluation Index
Register Number: 2019SR0692603

[4] Environmental Microorganism Image Segmentation Software Based on U-Net
Register Number: 2019SR0831957

[5] Environmental Microorganism Image Segmentation Software Based on mU-B1-Net
Register Number: 2019SR1130829

[6] Patch-level Environmental Microorganism Image Classification Software Based on Transfer Learning of VGG-16
Register Number: 2019SR1130817

Skills

Programming: Python, MATLAB, C/C++, LaTeX

Libraries: PyTorch, Keras, OpenCV

Academic Services

Reviewer:

Pattern Recognition (IF 8.518)	IEEE TCSVT (IF 5.859)	Artificial Intelligence Review (IF 9.588)
Pattern Recognition Letter (IF 4.757)	The Visual Computer (IF 2.835)	Frontiers in Microbiology (IF 6.064)
BioMed Research International (IF 3.246)	IEEE Access (IF 3.476)	

Honors & Awards

Scholarships :

- Scholarship Awardee Selected by China Scholarship Council 07/2022
- Excellent Freshmen Scholarship of NUDT (1st Class) 12/2021
- Suzhou Industrial Park Scholarship 12/2020
- The First Prize Scholarship of NEU 10/2020
- The First Prize Scholarship of NEU 10/2019
- The First Prize Scholarship of HFU 12/2017
- National Encouragement Scholarship 11/2016
- The First Prize Scholarship of HFU 11/2015

Honorary Titles:

- Outstanding Graduate of NEU (2% of all students) 01/2021
- Merit Student of NEU 11/2020
- Outstanding Graduate of HFU (2% of all students) 05/2018
- Outstanding Graduate of Anhui Province (1% of all students) 04/2018
- Merit Student of HFU 12/2017
- Excellent Student Cadre of HFU 12/2016
- Merit Student of HFU 12/2016
- Excellent Student Cadre of HFU 10/2015