

Yahui Liu

University of Trento & FBK, Italy

✉ yahui.liu@unitn.it • 🌐 yhlleo.github.io/

I am a PhD student in Multimedia and Human Understanding Group (MHUG) at the Department of Information Engineering and Computer Science of the University of Trento, Italy, supervised by Prof. Nicu Sebe and Dr. Bruno Lepri. Before that, I received B.Eng. degree in Photogrammetry and Remote Sensing and M.Eng. degree in Pattern Recognition and Intelligent System from Wuhan University in 2015 and 2018, respectively, under the supervision of Prof. Jian Yao. My research interests lie in the areas of Computer Vision and Natural Language Processing. Recently, I am working on *unsupervised learning* and *image domain translation*.

Education

- **University of Trento** **Italy**
Department of Information Engineering and Computer Science, Ph.D. 2018–2022
Supervisors: Prof. Nicu Sebe and Dr. Bruno Lepri
- **Wuhan University** **China**
Pattern Recognition and Intelligent System, Master of Engineering, GPA: 3.5/4.0 2015–2018
Supervisor: Prof. Jian Yao
- **Wuhan University** **China**
Remote Sensing Science and Technology, Bachelor of Engineering, GPA: 3.6/4.0 2011–2015

Research Experience

- **Tencent AI Lab**, Shenzhen, China. Sep. 2020 - present
Mentors: Dr. Linchao Bao and Dr. Wei Bi.
GANs, Image Domain Translation
- **FBK & Multimedia and Human Understanding Group (MHUG)**, Trento, Italy. Dec. 2018-present
Mentors: Prof. Nicu Sebe and Dr. Bruno Lepri.
Deep learning, GANs, Cross-modal Representations, Image Domain Translation
- **Tencent AI Lab**, Shenzhen, China. Nov. 2017–Sep. 2018
Mentors: Dr. Wei Bi and Dr. Xiaojiang Liu.
Deep Learning, Neural Dialogue Generation, Natural Language Processing
- **Computer Vision & Remote Sensing (CVRS) Lab**, Wuhan, China. Mar. 2015–Oct. 2017
Mentor: Prof. Jian Yao.
Computer Vision, Remote Sensing, Deep Learning

Research Projects

Computer Vision

- **Unsupervised Image-to-image Translation** *Mar. 2019–present*
Python, Pytorch
(1) Unsupervised multi-modal and multi-domain image-to-image translation, (2) Text-conditioned unsupervised image domain translation, (3) Generic methods for improving translation quality.
- **Gesture-to-Gesture translation** *Dec. 2018–Mar. 2019*
Python, Pytorch
proposed a novel method to achieve pretty hand gesture-to-gesture translation by using only a simple category independent conditional map.

Remote Sensing

- **Road Network Extraction** *Jul. 2017–Nov. 2017*
Python, TensorFlow
Designed a multi-task CNN for simultaneously extracting road surface, road edges and road centerlines from high resolution remotely sensed images (spatial resolution 0.21m).
- **Optimal Seamline Detection** *Jan. 2017–Jun. 2017*
C++, Python, Caffe
Proposed a method that combining the deep CNNs with Graph Cuts to get optimal seamline for stitching satellite images.

Natural Language Processing.....

Neural Dialogue Generation

Python, TensorFlow, Pytorch

Nov. 2017–Sep. 2018

A research project of Tencent AI Lab, NLP Group in Shenzhen, China. I'm solving several issues of current state-of-the-art neural dialogue generation methods, such as generic/dull responses, short responses, and diversity of responses, etc.

Selected Publications

- 1 **Yahui Liu**, Enver Sangineto, Yajing Chen, Linchao Bao, Haoxian Zhang, Nicu Sebe, Bruno Lepri, Wei Wang, and Marco De Nadai. *Smoothing the Disentangled Latent Style Space for Unsupervised Image-to-Image Translation*, **CVPR** (23.7%, Poster), June 2021.
- 2 **Yahui Liu**, Marco De Nadai, Deng Cai, Huayang Li, Xavier Alameda-Pineda, Nicu Sebe, and Bruno Lepri. *Describe What to Change: A Text-guided Unsupervised Image-to-Image Translation Approach*, **ACM MM** (27.8%, Oral), Oct. 2020.
- 3 Raul Gomez*, **Yahui Liu*** (Co-first Author), Marco De Nadai, Dimosthenis Karatzas, Nicu Sebe, and Bruno Lepri. *Retrieval Guided Unsupervised Multi-domain Image-to-Image Translation*, **ACM MM** (27.8%, Poster), Oct. 2020.
- 4 **Yahui Liu**, Marco De Nadai, Gloria Zen, Nicu Sebe, and Bruno Lepri. *Gesture-to-Gesture Translation in the Wild via Category-Independent Conditional Maps*, **ACM MM** (26.5%, Oral), Oct. 2019.
- 5 Jing Han, Jian Yao, Jiao Zhao, Jingmin Tu, and **Yahui Liu**. *Multi-oriented and Scale Invariant License Plate Detection Based on Convolutional Neural Networks*, **Sensors** (IF: 3.03), Mar. 2019.
- 6 **Yahui Liu**, Jian Yao, Rengping Xie, and Li Li. *DeepCrack: A Deep Hierarchical Feature Learning Architecture for Crack Segmentation*, **Neurocomputing** (IF: 4.07), Jan. 2019.
- 7 **Yahui Liu**, Jian Yao, Xiaohu Lu, Menghan Xia, Xingbo Wang, and Yuan Liu. *RoadNet: Learning to Comprehensively Analyze Road Networks in Complex Urban Scenes from High Resolution Remotely Sensed Images*. *IEEE Transactions on Geoscience and Remote Sensing* (**TGRS**, IF: 5.63), Sep. 2018.
- 8 **Yahui Liu**, Victoria Bi, Jun Gao, Xiaojiang Liu, Jian Yao, and Shuming Shi. *Towards Less Generic Responses in Neural Conversation Models: A Statistical Re-weighting Method*. **EMNLP** (23.2%, Oral), Aug. 2018.
- 9 Li Li, Jian Yao, **Yahui Liu**, Wei Yuan, Shuzhu Shi, and Shenggu Yuan. *Optimal Seamline Detection for Orthoimage Mosaicking by Combining Deep Convolutional Neural Network and Graph Cuts*, **Remote Sensing**, (IF: 4.12) Jul. 2017

Professional Activities

Program Committee Member/Reviewer:

- o IEEE Transactions on Industrial Informatics
- o IEEE Geoscience and Remote Sensing Letters
- o IEEE Access
- o IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
- o ACM Multimedia (2020, 2021), IJCAI (2021), CVPR (2021), ICCV (2021)

Scholarships and Awards

- o 2018-2021, The Scholarship of University of Trento, Italy
- o 2017-2018, The Second Prize Scholarship, Wuhan Univeristy, China
- o 2016-2017, The First Prize Scholarship, Excellent Student, Wuhan University, China
- o 2015-2016, Excellent Bachelor Thesis of Hubei Province, China (top 4%)
- o 2014-2015, The Second Prize Scholarship, Excellent Student, Excellent Student Cadre, Wuhan Univeristy, China
- o 2013-2014, The Second Prize Scholarship, Excellent Student, Excellent Student Cadre, Wuhan University, China
- o 2012-2013, The Third Prize Scholarship, Excellent Student, Excellent Student Cadre, Wuhan University, China

Language Skills

- o English, \geq B2
- o Mandarin, native speaker
- o Python (expert), C++ (fluent), Matlab (prior experience)