# Yahui Liu

https://yhlleo.github.io/
Google Scholar Profile

Email: yahui.cvrs@gmail.com
Address: Shenzhen, China

## RESEARCH INTERESTS

I am now a Principal Engineer at Huawei, Shenzhen, China. I got the certificate of Doctor Degree from the 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, in 2022. Before that, I received B.E. degree in Photogrammetry and Remote Sensing and M.E. degree in Pattern Recognition and Intelligent System from Wuhan University in 2015 and 2018, respectively. My research interests lie in the areas of computer vision and natural language processing. Recently, I have been working on *Unsupervised Learning*, *Image Domain Translation*, *Vision Transformers* and *Diffusion Models*.

## EDUCATION

- **University of Trento** — Trento, Italy
  Ph.D. student, Advisor: Prof. Nicu Sebe and Dr. Bruno Lepri — Nov. 2018 - May 2022
  Thesis Defense Committee: Vittorio Murino, Zhengyou Zhang, and Elisa Ricci

- **Wuhan University** — Wuhan, China
  M.S. in Computer Science, Advisor: Prof. Jian Yao — Sep. 2015 - Mar. 2018

- **Wuhan University** — Wuhan, China
  B.E. in Remote Sensing Science and Technology — Sep. 2011 - Jun. 2015

## RESEARCH EXPERIENCE

- **Huawei (Principal Engineer)** — Shenzhen, China
  with many excellent experts and engineers — 2022 - ?

- **Research intern, Tencent AI Lab (Intern)** — Shenzhen, China
  with Linchao Bao, and Wei Bi (Virtual Human and Effidit) — 2021 - 2022

- **Research intern, Amazon Alexa AI (Intern)** — Berlin, Germany (Remote)
  with Weiwei Cheng, and Gianni Barlacchi (Alexa News QA System) — 2020

- **Research intern, Tencent AI Lab (Intern)** — Shenzhen, China
  with Wei Bi, Xiaojiang Liu, and Shuming Shi (Chitchat) — 2017 - 2018

## PROFESSIONAL SERVICE

**Program comittee member**

- Conference on Neural Information Processing Systems (NeurIPS) — 2022 - 2024
- European Conference on Computer Vision (ECCV) — 2022, 2024
- International Conference on Machine Learning (ICML) — 2022, 2025
- IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) — 2021 - 2024
- IEEE/CVF International Conference on Computer Vision (ICCV) — 2021, 2023
- ACM International Conference on Multimedia (ACM MM) — 2020 - 2024
- International Joint Conference on Artificial Intelligence (IJCAI) — 2021, 2022

**Journal reviewer**

- TPAMI, IJCV, TNNLS, TII, TMM, GRSL, J-STARS, MVAP, PRL, Information Fusion

*: equal contribution

## Peer-refereed publications

### Conference papers

1. Bin Ren*, **Yahui Liu**\*, Yue Song, Wei Bi, Rita Cucchiara, Nicu Sebe and Wei Wang. Masked Jigsaw Puzzle: A Versatile Position Embedding for Vision Transformers. Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2023.

   **CVPR 2023**

2. **Yahui Liu**, Enver Sangineto, Wei Bi, Nicu Sebe, Bruno Lepri, and Marco De Nadai. Efficient Training of Visual Transformers with Small Datasets. Advances in Neural Information Processing Systems, 2021.

   **NeurIPS 2021**

3. **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. Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, 2021.

   **CVPR 2021**

4. Jiannan Xiang*, **Yahui Liu**\*, Deng Cai, Huayang Li, Defu Lian and Lemao Liu. Assessing Dialogue Systems with Distribution Distances. In Findings of the Association for Computational Linguistics, 2021.

   **ACL 2021**

5. Pierfrancesco Ardino, **Yahui Liu**, Elisa Ricci, Bruno Lepri, and Marco De Nadai. Semantic-Guided Inpainting Network for Complex Urban Scenes Manipulation. In Proceedings of the International Conference on Pattern Recognition, 2020.

   **ICPR 2020**

6. **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. In Proceedings of ACM International Conference on Multimedia, 2020.

   **ACM MM 2020**

7. **Yahui Liu**\*, Raul Gomez*, Marco De Nadai, Dimosthenis Karatzas, Nicu Sebe, and Bruno Lepri. Retrieval Guided Unsupervised Multi-domain Image-to-Image Translation. In Proceedings of ACM International Conference on Multimedia, 2020.

   **ACM MM 2020**

8. **Yahui Liu**, Marco De Nadai, Gloria Zen, Nicu Sebe, and Bruno Lepri. Gesture-to-Gesture Translation in the Wild via Category-Independent Conditional Maps. In Proceedings of ACM International Conference on Multimedia, 2019.

   **ACM MM 2019**

9. **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. In Proceedings of the Conference on Empirical Methods in Natural Language Processing, 2018.

   **EMNLP 2018**

10. Xiaohu Lu, Jian Yao, Haoang Li, **Yahui Liu**. 2-Line Exhaustive Searching for Real-Time Vanishing Point Estimation in Manhattan World. In Proceedings of IEEE Winter Conference on Applications of Computer Vision, 2017.

    **WACV 2017**

### Journal papers

11. Elia Peruzzo, Enver Sangineto*, **Yahui Liu**\*, Marco De Nadai, Wei Bi, Bruno Lepri and Nicu Sebe. Spatial Entropy Regularization for Vision Transformers, Machine Learning (IF: 5.8), 2024.

12. Yingyi Chen, Xi Shen, **Yahui Liu**, Qinghua Tao, Johan AK Suykens. Jigsaw-ViT: Learning jigsaw puzzles in vision transformer. Pattern Recognition Letters (**PRL**) (IF: 3.9), 2023.

13. **Yahui Liu**, Yajing Chen, Linchao Bao, Nicu Sebe, Bruno Lepri, Marco De Nadai. ISF-GAN: An Implicit Style Function for High-Resolution Image-to-Image Translation. IEEE Transactions on Multimedia (**TMM**) (IF: 8.4), 2022.

14. Lei Ding, Hao Tang, **Yahui Liu**, Yilei Shi, Xiao Xiang Zhu, Lorenzo Bruzzone. Adversarial Shape Learning for Building Extraction in VHR Remote Sensing Images. IEEE Transactions on Image Processing (**TIP**) (IF: 10.86), 2021.

15. 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 3.576), 2019.

16. **Yahui Liu**, Jian Yao, Rengping Xie, and Li Li. DeepCrack: A Deep Hierarchical Feature Learning Architecture for Crack Segmentation. **Neurocomputing** (IF 5.5), 2019.

17. **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: 7.5), 2019.

18. Renping Xie, Jian Yao, Kang Liu, Xiaohu Lu, **Yahui Liu**, Menghan Xia, and Qifei Zeng. Automatic Multi-image Stitching for Concrete Bridge Inspection by Combining Point and Line Features. **Automation in Construction** (IF: 9.6), 2018.

19. 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: 4.2), 2017.

### Preprints

20. Yixuan Su, Tian Lan, **Yahui Liu**, Fangyu Liu, Dani Yogatama, Yan Wang, Lingpeng Kong and Nigel Collier. Language Models Can See: Plugging Visual Controls in Text Generation, arXiv:2205.02655, 2022.

21. **Yahui Liu**, Marco De Nadai, Jian Yao, Nicu Sebe, Bruno Lepri, Xavier Alameda-Pineda. GMM-UNIT: Unsupervised Multi-Domain and Multi-Modal Image-to-Image Translation via Attribute Gaussian Mixture Modeling, arXiv:2003.06788, 2020.

## Awards & Honors

- Pengcheng Excellent Talents (鹏城优才) from Shenzhen, China, 2024

- Top Minds (天才少年，A档182∼201万) offer from Huawei, China, 2022

- Technical Expert (技术大咖) offer from Tencent AI Lab, China, 2021

- Scholarship of the University of Trento, Italy, 2018

- Excellent Graduate Freshman Scholarship of Wuhan University, China, 2015

- Outstanding Undergraduate Thesis, Hubei Province, China, 2015 (top 3%)

- Excellent Undergraduate Students, Wuhan University, China, 2012-2014

## Skills

- C/C++, Python, LaTeX, Matlab

- PyTorch, TensorFlow

- English, Mandarin