

# Yuyuan Liu

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## Education

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### Australian Institute for Machine Learning

PhD Candidate for Deep Learning

Adelaide

Dec. 2020 - Present

### University of Adelaide

Bachelor & Honors in Computer Science

First-class Honors with GPA 6.5/7.0

Adelaide

Dec. 2014 - Dec. 2019

## Research Interests

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Computer Vision in Deep Learning,  
Semi-supervised Learning · Semantic Segmentation · Out-of-Distribution Segmentation

## Publications

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† denotes equal contribution

- [12] [Yuyuan Liu](#)<sup>†</sup>, [Choubo Ding](#)<sup>†</sup>, Yu Tian, Guansong Pang, Vasileios Belagiannis, Ian Reid, Gustavo Carneiro. **Residual Pattern Learning for Pixel-wise Out-of-Distribution Detection in Semantic Segmentation.** *International Conference on Computer Vision (ICCV) 2023*
- [11] Yuanhong Chen<sup>†</sup>, [Yuyuan Liu](#)<sup>†</sup>, Hu Wang, Fengbei Liu, Chong Wang, Gustavo Carneiro. **A Closer Look at Audio-Visual Semantic Segmentation.** *Preprint*
- [10] Chong Wang, [Yuyuan Liu](#), Yuanhong Chen, Fengbei Liu, Yu Tian, and Gustavo Carneiro. **Learning Support and Trivial Prototypes for Interpretable Image Classification.** *International Conference on Computer Vision (ICCV) 2023*
- [9] Yuanhong Chen, Fengbei Liu, Hu Wang, Chong Wang, [Yuyuan Liu](#), Yu Tian, Gustavo Carneiro. **BoMD: Bag of Multi-label Descriptors for Noisy Chest X-ray Classification.** *International Conference on Computer Vision (ICCV) 2023*
- [8] [Yuyuan Liu](#), Yu Tian, Chong Wang, Yuanhong Chen, Fengbei Liu, Vasileios Belagiannis, Gustavo Carneiro. **Translation Consistent Semi-supervised Segmentation for 3D Medical Images.** *Preprint*
- [7] Yuanhong Chen, [Yuyuan Liu](#), Chong Wang, Michael Elliott, Chun Fung Kwok, Carlos Pena-Solorzano, Yu Tian, and others. **BRAIxDet: Learning to Detect Malignant Breast Lesion with Incomplete Annotations.** *Preprint*
- [6] Yu Tian<sup>†</sup>, [Yuyuan Liu](#)<sup>†</sup>, Guansong Pang, Fengbei Liu, Yuanhong Chen, Gustavo Carneiro. **Pixel-wise Energy-biased Abstention Learning for Anomaly Segmentation on Complex Urban Driving Scenes.** *17th European Conference on Computer Vision (ECCV), 2022.* **[Oral]**
- [5] [Yuyuan Liu](#), Yu Tian, Yuanhong Chen, Fengbei Liu, Vasileios Belagiannis, Gustavo Carneiro. **Perturbed and Strict Mean Teachers for Semi-supervised Semantic Segmentation.** *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022.*
- [4] Fengbei Liu, Yu Tian, Yuanhong Chen, [Yuyuan Liu](#), Vasileios Belagiannis, Gustavo Carneiro. **ACPL: Anti-curriculum Pseudo-labelling for Semi-supervised Medical Image Classification.** *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2022.*
- [3] Yu Tian, Guansong Pang, Fengbei Liu, [Yuyuan Liu](#), Chong Wang, Yuanhong Chen, Johan Verjans, Gustavo Carneiro. **Contrastive Transformer-based Multiple Instance Learning for Weakly Supervised Polyp Frame Detection.** *International Conference on Medical Imaging Computing and Computer-Assisted Intervention (MICCAI), 2022.* **[Early Accept]**
- [2] Chong Wang, Yuanhong Chen, [Yuyuan Liu](#), Yu Tian, and others. **Knowledge Distillation to Ensemble Global and Interpretable Prototype-based Mammogram Classification Models.** *International Conference on Medical Imaging Computing*

and Computer-Assisted Intervention (*MICCAI*), 2022. **[Early Accept]**

- [1] Yuyuan Liu, Yu Tian, Gabriel Maicas, Leonardo Zorron Cheng Tao Pu, Rajvinder Singh, Johan W Verjans, Gustavo Carneiro. **Photoshopping Colonoscopy Video Frames**. *IEEE 17th International Symposium on Biomedical Imaging (ISBI)*, 2020.

## Awards and Honors

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|----------------|--|----------------------------|
| 2020 - Present | <b>Scholarship:</b> Engineering, Computer & Mathematical Sciences Divisional Ph.D. Scholarship | <i>South<br/>Australia</i> |
| 2018 - 2019    | <b>Scholarship:</b> University of Adelaide Alumni Scholarship (International)                  | <i>South<br/>Australia</i> |

## Professional Activities

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### Reviewer of Journal

Peer Review

Oct. 2021 - Present

- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- IEEE Transactions on Medical Imaging (TMI)

### Reviewer of Academic Conferences

Peer Review

2021 yr. - Present

- Conference on Neural Information Processing Systems (NeurIPS)
- International Conference on Computer Vision (ICCV)
- International Conference on Computer Vision and Pattern Recognition (CVPR)
- European Conference on Computer Vision (ECCV)

## References

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- Prof. Gustavo Carneiro  
Ph. D, Professor, at Centre for Vision, Speech and Signal Processing (CVSSP), University of Surrey, Surrey, UK  
✉ g.carneiro@surrey.ac.uk
- Prof. Vasileios Belagiannis  
Ph. D, Professor, at Department of Electrical-Electronic-Communication Engineering, Friedrich-Alexander-Universität Erlangen-Nürnberg, Erlangen, Germany  
☎ +49 9131 85-27663 ✉ vasileios.belagiannis@fau.de
- Prof. Ian Reid  
Ph. D, Professor, at School of Computer Science, University of Adelaide, Adelaide, Australia  
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