

# Zizheng Pan

<https://zizhengpan.github.io>

Email : zizhpan@gmail.com

Mobile : +61-0405882881

## RESEARCH INTERESTS

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Deep Learning, Efficient and Scalable Vision, Transformer Efficiency.

## EDUCATION

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- **Monash University** Melbourne, Australia  
Ph.D. in Computer Science Jan 2021 – 2024
- **The University of Adelaide** Adelaide, Australia  
M.S. in Computer Science Jul 2018 - Jul 2020
- **Harbin Institute of Technology** Weihai, China  
B.E. in Software Engineering Sep 2015 - Jun 2019

## WORK EXPERIENCE

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- Research Intern at NVIDIA, AI Algorithm Group Jul 2023 - Oct 2023  
Mentors: De-An Huang, Zhiding Yu, Chaowei Xiao, Weili Nie and Anima Anandkumar.

## PUBLICATIONS

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(\* denotes equal contribution)

- Efficient Stitchable Task Adaptation.  
Haoyu He, **Zizheng Pan**, Jing Liu, Jianfei Cai, Bohan Zhuang  
In Conference on Computer Vision and Pattern Recognition (**CVPR**), 2024.
- Pruning Self-attentions into Convolutional Layers in Single Path,  
Haoyu He, Jing Liu, **Zizheng Pan**, Jianfei Cai, Jing Zhang, Dacheng Tao, Bohan Zhuang.  
IEEE Transactions on Pattern Analysis and Machine Intelligence (**TPAMI**), 2023.
- A Survey on Efficient Training of Transformers,  
Bohan Zhuang, Jing Liu, **Zizheng Pan**, Haoyu He, Yuetian Weng, Chunhua Shen  
International Joint Conference on Artificial Intelligence (**IJCAI**), 2023.
- Stitchable Neural Networks,  
**Zizheng Pan**, Jianfei Cai, Bohan Zhuang.  
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023. (**Highlight**)
- Dynamic Focus-aware Positional Queries for Semantic Segmentation,  
Haoyu He, Jianfei Cai, **Zizheng Pan**, Jing Liu, Jing Zhang, Dacheng Tao, Bohan Zhuang.  
Conference on Computer Vision and Pattern Recognition (**CVPR**), 2023
- Fast Vision Transformers with HiLo Attention.  
**Zizheng Pan**, Jianfei Cai, Bohan Zhuang.  
Conference on Neural Information Processing Systems (**NeurIPS**), 2022. (**Spotlight**)
- EcoFormer: Energy-Saving Attention with Linear Complexity.  
Jing Liu\*, **Zizheng Pan**\*, Haoyu He, Jianfei Cai, Bohan Zhuang.  
Conference on Neural Information Processing Systems (**NeurIPS**), 2022. (**Spotlight**)
- An Efficient Spatio-Temporal Pyramid Transformer for Action Detection.  
Yuetian Weng, **Zizheng Pan**, Mingfei Han, Xiaojun Chang, Bohan Zhuang.  
In European Conference on Computer Vision (**ECCV**), 2022.

- Less is More: Pay Less Attention in Vision Transformers.  
**Zizheng Pan**, Bohan Zhuang, Haoyu He, Jing Liu, Jianfei Cai.  
In AAAI Conference on Artificial Intelligence (**AAAI**), 2022.
- Scalable Visual Transformers with Hierarchical Pooling.  
**Zizheng Pan**, Bohan Zhuang, Jing Liu, Haoyu He, Jianfei Cai.  
In International Conference on Computer Vision (**ICCV**), 2021.
- The Road to Know-Where: An Object-and-Room Informed Sequential BERT for Indoor Vision-Language Navigation.  
Yuankai Qi, **Zizheng Pan**, Yicong Hong, Ming-Hsuan Yang, Anton van den Hengel, Qi Wu.  
In International Conference on Computer Vision (**ICCV**), 2021.
- Object-and-Action Aware Model for Visual Language Navigation.  
Yuankai Qi, **Zizheng Pan**, Shengping Zhang, Anton van den Hengel, Qi Wu.  
In European Conference on Computer Vision (**ECCV**), 2020.

## PREPRINT

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- T-Stitch: Accelerating Sampling in Pre-trained Diffusion Models with Trajectory Stitching, on arxiv, 2024.  
**Zizheng Pan**, Bohan Zhuang, De-An Huang, Weili Nie, Zhiding Yu, Chaowei Xiao, Jianfei Cai, Anima Anandkumar.
- Stitched ViTs are Flexible Vision Backbones, on arxiv, 2023.  
**Zizheng Pan**, Jing Liu, Haoyu He, Jianfei Cai, Bohan Zhuang.
- Mesa: A Memory-saving Training Framework for Transformers, on arXiv, 2021.  
**Zizheng Pan**, Peng Chen, Haoyu He, Jing Liu, Jianfei Cai, Bohan Zhuang.

## TALKS

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- Optimizing Vision Transformers for Efficient Training, Inference and Deployment  
Invited Talk at UMass Amherst Oct 2023

## SELECTED AWARDS

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- **CVPR 2023 DEI Travel Award** May 2023
- **Google Travel and Conference Grants** Apr 2023
- **Monash Graduate Scholarship** Oct 2020
- **Adelaide Summer Research Scholarship** Apr 2019
- **Outstanding Graduate in Harbin Institute of Technology** Jun 2019

## TEACHING EXPERIENCE

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- **FIT 5201 - Machine Learning, TA** Feb 2022 - Nov 2022

## PROFESSIONAL ACTIVITIES

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- **Conference Reviewer** : CVPR 2022/2023, ICCV 2021/2023, ECCV 2022, NeurIPS 2022/2023, ICLR 2024

## SKILLS

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- **Language:** English, Chinese
- **Coding:** Python, PyTorch, Git