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I am a third-year Ph.D. student in Computer Science at the University of Adelaide, Australia, expecting to graduate in June 2027. My research focuses on **Video World Models** and **Video Generation Post-Training**.

Education

Doctor of Philosophy, Computer Science University of Adelaide Topic: Multimodal video/image generation. <i>Supervisors:</i> Prof. Lingqiao Liu , Dr. Xinyu Zhang	Sep 2023 – Mar 2027 (Expected) Adelaide, Australia
Master of Machine Learning and Computer Vision Australian National University Thesis topic: Multi-view 3D understanding systems for object detection. <i>Thesis advisor:</i> Prof. Liang Zheng Grade: 90/100, High Distinction.	Jul 2020 – Jul 2023 Canberra, Australia
BSc Computer Sciences with A.I. University of Nottingham Ningbo China Thesis topic: Roadside camera detection system for safe traffic. <i>Thesis advisor:</i> Dr. Zheng Lu	Sep 2016 – Jul 2020 Ningbo, China

Experiences

Research Intern @ Token Foundry, Alibaba Topic: Video foundation models and video world models. <i>Supervisor:</i> Dr. Xinlong Wang - Leading and contributing to the development of end-to-end RL pipelines and new RL algorithms for next-generation video generation foundation models. - Investigating evolvable and persistent world representation for video world models.	May 2026 – Present Beijing, China
Research Intern @ DAMO Academy, Alibaba Topic: Multi-modal image generation/editing. <i>Supervisor:</i> Dr. Hao Luo Investigated methods for multimodal progressive (multi-granularity) image object removal.	Jan 2025 – Apr 2025 Hangzhou, China
Research Intern @ Leonardo.AI/Canva Topic: Controllable image generation. <i>Supervisors:</i> Mr. Ethan Smith , Prof. Martin Bell - Developed and deployed ControlNet modules for Leonardo.AI's first-generation foundation model, the Phoenix Model. - Set up and developed the foundational codebase for customized generation based on the Phoenix Model.	Feb 2024 – Jul 2024 Sydney, Australia
Research Intern @ Institute of Automation, Chinese Academy of Sciences Topic: Multi-view 3D understanding systems for object detection. <i>Supervisors:</i> Prof. Haoran Li , Prof. Dongbin Zhao - Developed roadside multi-camera detection systems for the RoboMaster AI Challenge scene. - Participated in ICRA 2021 RoboMaster Competition and won the Second Prize as a team member representing the Institute of Automation, Chinese Academy of Sciences.	Dec 2020 – Dec 2021 Beijing, China

Research Outputs

Topic: Generative World Modeling

- [1] **LiveWorld: Simulating Out-of-Sight Dynamics in Generative Video World Models** [[demo/paper/code](#)]
Zicheng Duan*, Jiatong Xia*, Zeyu Zhang*, Wenbo Zhang, Gengze Zhou, Chenhui Gou, Yefei He, Feng Chen, Xinyu Zhang, Lingqiao Liu
European Conference on Computer Vision (ECCV), 2026. Rating 5/5/5.

- [2] **Points-to-3D: Structure-Aware 3D Generation with Point Cloud Priors** [[demo/paper](#)]
Jiatong Xia*, **Zicheng Duan***, Anton van den Hengel, Lingqiao Liu
Computer Vision and Pattern Recognition Conference (CVPR), 2026.
- [3] **TerraVis: Towards Evaluation of World-Grounded Visual Consistency in Text-to-Image Generation via MLLM Workflows** [[paper/code](#)]
Shuai Fu, Jing Gu, Jian Zhou, **Zicheng Duan**, Gengze Zhou, Qi Wu
NeurIPS 2026 (Evaluations and Datasets Track).
- [4] **Latent spatial memory for video world models** [[demo/paper/code](#)]
Weijie Wang, Haoyu Zhao, Yifan Yang, Feng Chen, Zeyu Zhang, Yefei He, **Zicheng Duan**, Donny Y Chen, Yuqing Yang, Bohan Zhuang
arxiv 2026.
- [5] **VQ-VA World: Towards High-Quality Visual Question-Visual Answering** [[demo/paper](#)]
Chenhui Gou*, Zilong Chen*, Zeyu Wang*, Feng Li, Deyao Zhu, **Zicheng Duan**, Kunchang Li, Chaorui Deng, Hongyi Yuan, Haoqi Fan, Cihang Xie, Jianfei Cai, Hamid Rezaatofghi
Computer Vision and Pattern Recognition Conference (CVPR), 2026.

Topic: Controllable Content Generation

- [6] **EZiGen: Enhancing zero-shot personalized image generation with precise subject encoding and decoupled guidance** [[demo/paper/code](#)]
Zicheng Duan, Yuxuan Ding, Chenhui Gou, Ziqin Zhou, Ethan Smith, Lingqiao Liu
British Machine Vision Conference (BMVC), 2025.
- [7] **Training-free motion-guided video generation with enhanced temporal consistency using motion consistency loss** [[demo/paper](#)]
Xinyu Zhang, **Zicheng Duan**, Dong Gong, Lingqiao Liu
British Machine Vision Conference (BMVC), 2025.
- [8] **Let Your Video Listen to Your Music!** [[demo/paper](#)]
Xinyu Zhang, Dong Gong, **Zicheng Duan**, Anton van den Hengel, Lingqiao Liu
ACM International Conference on Multimedia (ACM MM), 2025.
- [9] **Frame-wise Conditioning Adaptation for Fine-Tuning Diffusion Models in Text-to-Video Prediction** [[paper](#)]
Zheyuan Liu, Junyan Wang, **Zicheng Duan**, Cristian Rodriguez-Opazo, Anton van den Hengel
Transactions on Machine Learning Research (TMLR), 2024.

Topic: 3D Multiview Detection

- [10] **Multiview Detection with Cardboard Human Modeling** [[paper/code](#)]
Jiahao Ma*, **Zicheng Duan***, Liang Zheng, Chuong Nguyen
Asian Conference on Computer Vision (ACCV), 2024.
- [11] **Voxelized 3D Feature Aggregation for Multiview Detection** [[paper/code](#)]
Jiahao Ma, Jinguang Tong, Shan Wang, Wei Zhao, **Zicheng Duan**, Chuong Nguyen
International Conference on Digital Image Computing: Techniques and Applications (DICTA), 2024.
- [12] **Neurons perception dataset for Robomaster AI challenge** [[paper/code](#)]
Haoran Li, **Zicheng Duan**, Jiaqi Li, Mingjun Ma, Yaran Chen, Dongbin Zhao
International Joint Conference on Neural Networks (IJCNN), 2022.
- [13] **MVM3Det: A Novel Method for Multi-view Monocular 3D Detection** [[paper/code](#)]
Haoran Li, **Zicheng Duan**, Mingjun Ma, Yaran Chen, Jiaqi Li, Dongbin Zhao
arXiv preprint, 2021.

Others

- [14] **ABCP: Automatic blockwise and channelwise network pruning via joint search**
Jiaqi Li, Haoran Li, Yaran Chen, Zixiang Ding, Nannan Li, Mingjun Ma, **Zicheng Duan**, Dongbin Zhao
IEEE Transactions on Cognitive and Developmental Systems (TCDS), 2022.

Academic Services & Invited Talks

Conference Reviewer: CVPR 25/26, AAAI 25/26, NeurIPS 25, ICASSP 24.

Invited Talk: *Controllability Matters: Interpreting World Models from a Controllability Perspective*, DICTA 2025 Workshop: [Visual Generative Models: Past, Present, and Future](#).