

Name: Joey Tianyi Zhou

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Education

PhD in Computer Science, Nanyang Technological University (NTU), Singapore, 2011-2015.

Academic Appointments

- Associate Professor (Tenured), Singapore Management University (SMU) | Singapore | 2026 -Present.
- Principal Scientist, Agency for Science, Technology and Research (A*STAR) | Singapore | 2023 - Present.
- Adjunct Associate Professor, National University of Singapore (NUS) | Singapore | 2022-Present.

Academic Administrative Positions

- Chapter Lead (Equivalent to Department Head), Agentic AI Chapter, Institute of Advanced Intelligence and Computing (IAIC), A*STAR | Singapore | 2026 – Present
- Head, AI Engineering & Platform, National Applied AI Centre of Excellence (CoE) | Singapore | 2026 - Present.
- Deputy Director, Centre for Frontier AI Research (CFAR), A*STAR | Singapore | 2024 - Present.

Other Positions Held

Agency for Science, Technology and Research (A*STAR)

- Scientist I, II - Senior Scientist, I, II, A*STAR | Singapore | 2017 - 2023.
- Adjunct Assistant Professor, National University of Singapore (NUS) | Singapore | 2020-2022.

Awards and Honors

- 2026, World's Highly Ranked Scholars (Top 0.05%).
- 2025, Youth Outstanding Paper Award Nomination, World Artificial Intelligence Conference.
- 2025, World's Top 2% Scientists, Career Lifetime.
- 2024, Best Paper Award Nomination, ACM Multimedia.
- 2022, Best Paper, IEEE SmartCity.

- 2020, National Research Foundation Fellow (NRF-F) Finalist.
- 2019, Runner-up Prize, ICCV Hands Challenge.
- 2019, Best Poster Award, ICCV Hands Workshop.
- 2019, Best Paper Award, BOOM Workshop at IJCAI.
- 2017, Best Reviewer Award, NeurIPS.
- 2016, Best Student Paper Nomination, ECCV.

Professional Memberships

- IEEE Senior Member.
- INNS Member, AICI Section Technical Coordinator.
- EAI Distinguished Member.

RESEARCH

Research Interests

- Resource-efficient machine learning.
- Robust and trustworthy machine learning.
- Foundation models and agentic AI systems.

Publications

Journal Articles [Selected]

1. Bing Li, Haotian Duan, Yun Liu, Le Zhang, Wei Cui, and Joey Tianyi Zhou. STADe: Sensory Temporal Action Detection via Temporal-Spectral Representation Learning. In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2025*.
2. Bing Li, Wei Cui, Le Zhang, Ce Zhu, Wei Wang, Ivor W. Tsang, and Joey Tianyi Zhou. Diffformer: Multi-resolutional Differencing Transformer with Dynamic Ranging for Time Series Analysis. In *TPAMI 2023*.
3. Wenzheng Zeng, Yang Xiao, Guilei Hu, Zhiguo Cao, Sicheng Wei, Zhiwen Fang, Joey Tianyi Zhou*, and Junsong Yuan. Eyelid's Intrinsic Motion-Aware Feature Learning for Real-Time Eyeblink Detection in the Wild. In *IEEE Transactions on Information Forensics and Security (TIFS) 2023*. IEEE Spotlight Paper Award.
4. Zongbo Han, Changqing Zhang, Huazhu Fu, and Joey Tianyi Zhou. Trusted Multi-View Classification with Dynamic Evidential Fusion. In *TPAMI 2022*. Highly Cited Paper.
5. Joey Tianyi Zhou, Hao Zhang, Di Jin, and Xi Peng. Dual Adversarial Neural Transfer for Sequence Labeling. In *TPAMI 2021*.
6. Joey Tianyi Zhou, Le Zhang, Jiawei Du, Xi Peng, Zhiwen Fang, Zhe Xiao, and Hongyuan Zhu. Locality-Aware Crowd Counting. In *TPAMI 2021*.
7. Hao Zhang, Aixin Sun, Wei Jing, Liangli Zhen, Joey Tianyi Zhou*, and Rick Siow Mong Goh. Natural Language Video Localization: A Revisit in Span-based Question Answering Framework. In *TPAMI 2020*.
8. Joey Tianyi Zhou, Ivor W. Tsang, Sinno Jialin Pan and Mingkui Tan. Natural Language Guided Visual Grounding in Image and Video. In *Journal of Machine Learning Research (JMLR) 2019*.
9. Joey Tianyi Zhou, Sinno Jialin Pan, Ivor W. Tsang. A Deep Learning Framework for Hybrid Heterogeneous Transfer Learning. In *Artificial Intelligence (AIJ) 2019*.
10. Joey Tianyi Zhou, Jiawei Du, Hongyuan Zhu, Xi Peng, Yong Liu, Rick Siow Mong Goh. AnomalyNet: An Anomaly Detection Network for Video Surveillance. In *IEEE Transactions on Information Forensics & Security (TIFS) 2019*.

Book Chapters

None.

Conference Proceedings

1. Zhifang Zhang, Qiqi Tao, Jiaqi Lv, Na Zhao, Lei Feng, and Joey Tianyi Zhou. TokenSwap: Backdoor Attack on the Compositional Understanding of Large Vision-Language Models. In *ICML 2026*.
2. Ziyuan Yang, Ming Yan, Yi Zhang, and Joey Tianyi Zhou. Poisoned Distillation: Injecting Backdoors into Distilled Datasets Without Raw Data Access. In *AAAI 2026*.
3. Tianmi Ma, Wenxin Huang, Jiawei Du, Lin Li, Xian Zhong, and Joey Tianyi Zhou. Evolving Quantitative Reasoning through Self-Play in Digital Twin Markets. In *ICML 2026*.
4. Heng Zhao, Yew-Soon Ong, and Joey Tianyi Zhou*. Agentic Spatio-Temporal Grounding via Collaborative Reasoning. In *SIGIR 2026*.
5. Xin Zhang, Ziruo Zhang, Jiawei Du, Zuozhu Liu, and Joey Tianyi Zhou*. Beyond Modality Collapse: Representation Blending for Multimodal Dataset Distillation. In *NeurIPS 2025*.
6. Cheng Shen, Yew-Soon Ong, and Joey Tianyi Zhou*. CondenseLM: LLMs-driven Text Dataset Condensation via Reward Matching. In *EMNLP 2025*.
7. Xin Zhang, Jiawei Du, Ping Liu, and Joey Tianyi Zhou*. Breaking Class Barriers: Efficient Dataset Distillation via Inter-Class Feature Compensator. In *ICLR 2025*.
8. Ruizhe Chen, Yichen Li, Jianfei Yang, Yang Feng, Joey Tianyi Zhou, Jian Wu, and Zuozhu Liu. Identifying and Mitigating Social Bias Knowledge in Language Models. In *NAACL 2025*.
9. Tianmi Ma, Jiawei Du, Wenxin Huang, Wenjie Wang, Liang Xie, Xian Zhong, and Joey Tianyi Zhou. Agent Trading Arena: A Study on Numerical Understanding in LLM-Based Agents. In *EMNLP 2025*.
10. Jiawei Du, Xin Zhang, Juncheng Hu, Wenxin Huang, and Joey Tianyi Zhou*. Diversity-Driven Synthesis: Enhancing Dataset Distillation through Directed Weight Adjustment. In *NeurIPS 2024*. Spotlight Paper, top 2%.
11. Yuxin Hong, Xiao Zhang, Xin Zhang, and Joey Tianyi Zhou*. Evolution-aware VAriance (EVA) Coreset Selection for Medical Image Classification. In *ACM MM 2024*. Best Paper Nomination Award.
12. Xin Zhang, Jiawei Du, Weiying Xie, Yunsong Li, and Joey Tianyi Zhou*. Spanning Training Progress: Temporal Dual-Depth Scoring (TDDS) for Enhanced Dataset Pruning. In *CVPR 2024*.
13. Yang He, Lingao Xiao, Joey Tianyi Zhou*, and Ivor W. Tsang. Multisize Dataset Condensation. In *ICLR 2024*. Oral, top 1.2%.
14. Xiaopeng Xie, Ming Yan, Xiwen Zhou, Chenlong Zhao, Suli Wang, Yong Zhang, and Joey Tianyi Zhou*. Shortcuts Arising from Contrast: Towards Effective and Lightweight Clean-Label Attacks in Prompt-Based Learning. In *EMNLP 2024*.
15. Jiaxiang Liu, Tianxiang Hu, Jiawei Du, Ruiyuan Zhang, Joey Tianyi Zhou, and Zuozhu Liu. KPL: Training-Free Medical Knowledge Mining of Vision-Language Models. In *EMNLP 2024*.
16. Yang He, Lingao Xiao, and Joey Tianyi Zhou*. You Only Condense Once: Two Rules for Pruning Condensed Datasets. In *NeurIPS 2023*.
17. Jiawei Du, Qin Shi, and Joey Tianyi Zhou*. Sequential Subset Matching for Dataset Distillation. In *NeurIPS 2023*.
18. Ping Liu, Xin Yu, and Joey Tianyi Zhou*. Meta Knowledge Condensation for Federated Learning. In *ICLR 2023*.
19. Jiawei Du, Daquan Zhou, Jiashi Feng, Vincent Y. F. Tan, and Joey Tianyi Zhou. Sharpness-aware Training for Free. In *NeurIPS 2022*.
20. Jiawei Du, Hanshu Yan, Jiashi Feng, Joey Tianyi Zhou*, Liangli Zhen, Rick Siow Mong Goh, and Vincent Y. F. Tan. Efficient Sharpness-aware Minimization for Improved Training of Neural Networks. In *ICLR 2022*.
21. Gabriel Tjio, Ping Liu, Joey Tianyi Zhou, and Rick Siow Mong Goh. Adversarial Semantic Hallucination for Domain Generalized Semantic Segmentation. In *WACV 2022*.
22. Zongbo Han, Changqing Zhang, Huazhu Fu, and Joey Tianyi Zhou. Trusted Multi-View Classification. In *ICLR 2021*.

23. Huan Ma, Zongbo Han, Changqing Zhang, Huazhu Fu, Joey Tianyi Zhou, and Qinghua Hu. Trustworthy Multimodal Regression with Mixture of Normal-inverse Gamma Distributions. In *NeurIPS 2021*.
24. Xinke Li, Zhiru Chen, Yue Zhao, Zekun Tong, Yabang Zhao, Andrew Lim, and Joey Tianyi Zhou. PointBA: Towards Backdoor Attacks in 3D Point Cloud. In *ICCV 2021*.
25. Hao Zhang, Aixin Sun, Wei Jing, Liangli Zhen, Joey Tianyi Zhou, and Rick Siow Mong Goh. Parallel Attention Network with Sequence Matching for Video Grounding. In *ACL 2021*.
26. Hao Zhang, Aixin Sun, Wei Jing, Guoshun Nan, Liangli Zhen, Joey Tianyi Zhou, and Rick Siow Mong Goh. Video Corpus Moment Retrieval with Contrastive Learning. In *SIGIR 2021*.
27. Yunfan Li, Peng Hu, Zitao Liu, Dezhong Peng, Joey Tianyi Zhou, and Xi Peng. Contrastive Clustering. In *AAAI 2021*.
28. Di Jin, Zhijing Jin, Joey Tianyi Zhou*, and Peter Szolovits. Is BERT Really Robust? A Strong Baseline for Natural Language Attack on Text Classification and Entailment. In *AAAI 2020*. Pioneering work in LLM robustness; citation approximately 1800.
29. Ming Yan, Hao Zhang, Di Jin, and Joey Tianyi Zhou*. Multi-source Meta Transfer for Low Resource Multiple Choice Question Answering. In *ACL 2020*.
30. Jiawei Du, Hu Zhang, Joey Tianyi Zhou*, Yi Yang, and Jiashi Feng. Query-efficient Meta Attack to Deep Neural Networks. In *ICLR 2020*.

Research Grants

- Reassemble Data Before Sharing: Innovative Privacy-Preserved Data-Sharing Solutions for Cloud Services (Digital Trust Centre Innovation Grant), PI, S\$998,400, 2025-2026.
- Breaking Multimodal Correspondence: Crafting Safer and Fairer Multimodal AIGC (Singapore-Japan Joint Grant), PI, S\$348,118, 2025-2028.
- Privacy²: Fine-Tuning Encapsulated LLMs to Downstream Tasks Without Peeking on Private Data (National Multimodal Language Programme), Team-PI, S\$3,900,000, 2025-2028.
- Sequential Deepfake Model Attribution (National AISG Research Grant), PI, S\$999,999, 2025-2028.
- Multimodal Deepfakes Generation (National OTS Engineering Pillar), PI-WP5B, S\$2,000,040, 2024-2026.
- Tiny Machine Learning (Central Research Funding), PI, S\$900,000, 2022-2024.
- DeepEye-AI for X-ray Security Screening (GAP Funding), PI, S\$281,000, 2019-2020.

TEACHING

Teaching Areas

- Deep learning
- Machine learning
- Computer vision

Courses Taught

Singapore Management University

Undergraduate Programmes :

Postgraduate Professional Programmes :

THESES AND DISSERTATIONS

Theses and Dissertations Supervised

- Jiawei Du, PhD thesis, *Improved Gradient-Based Learning for Enhanced Efficiency and Generalization of Deep Neural Networks*, co-supervised with Associate Professor Vincent Y. F. Tan and Associate Professor Xinchao Wang, NUS, 2023.
- Heng Zhao, PhD thesis, *Natural Language Guided Visual Grounding in Image and Video*, co-supervised with Professor Yew-soon Ong, NTU, 2026.

Theses and Dissertations Assessed

- Yeat Jeng Ng, PhD thesis, *Towards Generalisation in Machine Learning under Subpopulation Shifts: Active, Passive, and Spectral Bias Perspectives*, External Examiner, University of Sussex, 2024.

EXTERNAL SERVICE – PROFESSIONAL

- **Standard Editor:** Artificial Intelligence Journal (AIJ)
- **Associate Editor:** International Journal of Computer Vision (IJCV), IEEE Transactions on Emerging Topics in Computational Intelligence.
- **Associate Programme Chair:** IJCAI 2025.
- **Industry Programme Co-Chair:** IJCNN 2025.
- **Programme Chair:** IJCNN 2027.
- **Workshop Chair:** IEEE CAI 2024.
- **Organizing Committee:** Supercomputing Asia 2021.
- **Area Chair:** NeurIPS 2023-2025; ICML 2023-2025; ICLR 2023-2025; KDD 2025; IJCAI 2024.
- **Workshop Organiser:** IJCAI 2025 workshop and competition on Deepfake Detection, Localization and Interpretability; ICDCS 2020-2022 workshop on Efficient AI; ACML 2016 Workshop on Learning on Big Data; IJCAI 2019 Workshop on Multi-output Learning.