

Yizeng Han

CONTACT INFORMATION	Alibaba, DAMO Academy Beijing, China	<i>Email:</i> hanyizeng.hyz@alibaba-inc.com <i>Homepage:</i> www.yizenghan.top
RESEARCH INTERESTS	My research focuses on deep learning and computer vision, in particular dynamic neural networks and efficient learning/inference of deep models in resource-constrained scenarios.	
EDUCATION	Ph.D, Department of Automation, Tsinghua University <i>Advisors:</i> Shiji Song and Gao Huang	2018 - 2024
	B.S., Department of Automation, Tsinghua University GPA Rank: 38/141	2014 - 2018
RESEARCH EXPERIENCE	Intern, Megvii Technology <i>Advisor:</i> Xiangyu Zhang Intern, Georgia Institute of Technology <i>Advisor:</i> Gregory D Abowd	04/2023 - 12/2023 06/2017 - 8/2017
AWARDS & HONORS	<ul style="list-style-type: none">- First Prize of CSIG Natural Science Award- Outstanding Graduate of Tsinghua University- Outstanding Graduate of Beijing- Outstanding Doctoral Dissertation of Tsinghua University- Comprehensive Excellence Scholarship, Tsinghua University- National Scholarship, Ministry of Education of China- Comprehensive Excellence Scholarship, Tsinghua University- Comprehensive Excellence Scholarship, Tsinghua University- Academic Excellence Scholarship, Tsinghua University	2025 2024 2024 2024 2023 2022 2017 2016 2015
PUBLICATIONS	<ol style="list-style-type: none">1. Yizeng Han*, Gao Huang*, Shiji Song, Le Yang, Honghui Wang, Yulin Wang. Dynamic neural networks: a survey. <i>IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)</i>, 2021.2. Yizeng Han*, Zeyu Liu*, Zhihang Yuan*, Yifan Pu, Gao Huang, Shiji Song. Latency-aware Unified Dynamic Networks For Efficient Image Recognition. <i>IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)</i>, 2024.3. Yizeng Han, Gao Huang, Shiji Song, Le Yang, Yitian Zhang, Haojun Jiang. Spatially adaptive feature refinement for efficient inference. <i>IEEE Transactions on Image Processing (TIP)</i>, 2021.4. Wangbo Zhao*, Yizeng Han*, Jiasheng Tang, Zhikai Li, Yibing Song, Kai Wang, Zhangyang Wang, Yang You. A Stitch in Time Saves Nine: Small VLM is a Precise Guidance for accelerating Large VLMs. <i>The Conference on Computer Vision and Pattern Recognition (CVPR)</i>, 2025.5. Wangbo Zhao, Yizeng Han, Jiasheng Tang, Kai Wang, Yibing Song, Gao Huang, Fan Wang, Yang You. Dynamic Diffusion Transformer. <i>International Conference on Learning Representations (ICLR)</i>, 2025.	

6. **Yizeng Han***, Dongchen Han*, Zeyu Liu, Yulin Wang, Xuran Pan, Yifan Pu, Chao Deng, Junlan Feng, Shiji Song, Gao Huang. Dynamic Perceiver for Efficient Visual Recognition. *International Conference on Computer Vision (ICCV)*, 2023.
7. **Yizeng Han***, Zhihang Yuan*, Yifan Pu*, Chenhao Xue, Shiji Song, Guangyu Sun, Gao Huang. Latency-aware Spatial-wise Dynamic Networks. *Conference on Neural Information Processing Systems (NeurIPS)*, 2022.
8. **Yizeng Han***, Yifan Pu*, Zihang Lai, Chaofei Wang, Shiji Song, Junfeng Cao, Wenhui Huang, Chao Deng, Gao Huang. Learning to Weight Samples for Dynamic Early-exiting Networks. *European Conference on Computer Vision (ECCV)*, 2022.
9. Le Yang*, **Yizeng Han***, Xi Chen, Shiji Song, Jifeng Dai, Gao Huang. Resolution adaptive networks for efficient inference. *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020.
10. Yifan Pu*, **Yizeng Han***, Yulin Wang, Junlan Feng, Chao Deng, Gao Huang. Fine-grained Recognition with Learnable Semantic Data Augmentation. *IEEE Transactions on Image Processing (TIP)*, 2023.
11. Chaoqun Du*, **Yizeng Han***, Gao Huang. SimPro: A Simple Probabilistic Framework Towards Realistic Long-Tailed Semi-Supervised Learning. *International Conference on Machine Learning (ICML)*, 2024.
12. Wangbo Zhao, Jiasheng Tang, **Yizeng Han**, Yibing Song, Kai Wang, Gao Huang, Fan Wang, Yang You. Dynamic Tuning Towards Parameter and Inference Efficiency for ViT Adaptation. *Conference on Neural Information Processing Systems (NeurIPS)*, 2024.
13. Yulin Wang, Yang Yue, Yang Yue, Huanqian Wang, Haojun Jiang, **Yizeng Han**, Zanlin Ni, Yifan Pu, Minglei Shi, Rui Lu, Qisen Yang, Andrew Zhao, Zhuofan Xia, Shiji Song, Gao Huang. Emulating Human-like Adaptive Vision for Efficient and Flexible Machine Visual Perception. *Nature Machine Intelligence*, 2025.
14. Dongchen Han, Ziyi Wang, Zhuofan Xia, **Yizeng Han**, Yifan Pu, Chunjiang Ge, Jun Song, Shiji Song, Bo Zheng, Gao Huang. Demystify Mamba in Vision: A Linear Attention Perspective. *Conference on Neural Information Processing Systems (NeurIPS)*, 2024.
15. Dongchen Han, Yifan Pu, Zhuofan Xia, **Yizeng Han**, Xuran Pan, Xiu Li, Jiwen Lu, Shiji Song, Gao Huang. Bridging the Divide: Reconsidering Softmax and Linear Attention. *Conference on Neural Information Processing Systems (NeurIPS)*, 2024.
16. Zanlin Ni, Yulin Wang, Renping Zhou, **Yizeng Han**, Jiayi Guo, Zhiyuan Liu, Yuan Yao, Gao Huang. ENAT: Rethinking Spatial-temporal Interactions in Token-based Image Synthesis. *Conference on Neural Information Processing Systems (NeurIPS)*, 2024.
17. Yang Yue, Yulin Wang, Bingyi Kang, **Yizeng Han**, Shenzhi Wang, Shiji Song, Jiashi Feng, Gao Huang. Dynamic Inference of Multimodal Large Language Models for Efficient Robot Execution. *Conference on Neural Information Processing Systems (NeurIPS)*, 2024.

18. Le Yang, Ziwei Zheng, **Yizeng Han**, Shiji Song, Gao Huang, Fan Li. OStr-DARTS: Differentiable Neural Architecture Search based on Operation Strength. *IEEE Transactions on Cybernetics*, 2024.
19. Dongchen Han*, Tianzhu Ye*, **Yizeng Han**, Zhuofan Xia, Shiji Song, Gao Huang. Agent Transformer: On the Integration of Softmax and Linear Attention. *European Conference on Computer Vision (ECCV)*, 2024.
20. Jiangshan Wang, Yifan Pu, Yiru Wang, **Yizeng Han**, Jiayi Guo, Xiu Li, Gao Huang, GRA: Detecting Oriented Objects through Group-wise Rotating and Attention. *European Conference on Computer Vision (ECCV)*, 2024.
21. Le Yang, Ziwei Zheng, **Yizeng Han**, Hao Cheng, Shiji Song, Gao Huang, Fan Li. DyFADet: Dynamic Feature Aggregation for Temporal Action Detection. *European Conference on Computer Vision (ECCV)*, 2024.
22. Yifan Pu, Zhuofan Xia, Jiayi Guo, Dongchen Han, Qixiu Li, Duo Li, Yuhui Yuan, Ji Li, **Yizeng Han**, Shiji Song, Gao Huang, Xiu Li. Efficient Diffusion Transformer with Step-wise Dynamic Attention Mediators. *European Conference on Computer Vision (ECCV)*, 2024.
23. Zhuofan Xia, Dongchen Han, **Yizeng Han**, Xuran Pan, Shiji Song, Gao Huang. GSVA: Generalized Segmentation via Multimodal Large Language Models. *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
24. Yong Xien Chng, Henry Zheng, **Yizeng Han**, Xuchong Qiu, Gao Huang. Mask Grounding for Referring Image Segmentation. *Conference on Computer Vision and Pattern Recognition (CVPR)*, 2024.
25. Yulin Wang, Yang Yue, Rui Lu, **Yizeng Han**, Shiji Song, Gao Huang. EfficientTrain++: Generalized Curriculum Learning for Efficient Visual Backbone Training. *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*, 2024.
26. Dongchen Han, Xuran Pan, **Yizeng Han**, Shiji Song, Gao Huang. FLatten Transformer: Vision Transformer using Focused Linear Attention. *International Conference on Computer Vision (ICCV)*, 2023.
27. Yifan Pu, Yiru Wang, Zhuofan Xia, **Yizeng Han**, Yulin Wang, Weihao Gan, Zidong Wang, Shiji Song, Gao Huang. Adaptive Rotated Convolution for Rotated Object Detection. *International Conference on Computer Vision (ICCV)*, 2023.
28. Yulin Wang, Zhaoxi Chen, Haojun Jiang, Shiji Song, **Yizeng Han**, G Huang. Adaptive Focus for Efficient Video Recognition. *International Conference on Computer Vision (ICCV, Oral)*, 2021.
29. Chaofei Wang, Jiayu Xiao, **Yizeng Han**, Qisen Yang, Shiji Song, Gao Huang. Towards learning spatially discriminative feature representations. *International Conference on Computer Vision (ICCV)*, 2021.
30. Le Yang, Xiaoli Gong, Zhengwei Wu, **Yizeng Han**, Lijun He, Fan Li. Dark-channel mixed attention based neural networks for smoke detection in fog environment. *ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp)*, 2021.

31. Cheng Zhang, Qiuyue Xue, Anandghan Waghmare, Ruichen Meng, Sumeet Jain, **Yizeng Han**, Xinyu Li, Kenneth Cunefare, Thomas Ploetz, Thad Starner, Omer Inan, Gregory D Abowd. FingerPing: Recognizing fine-grained hand poses using active acoustic on-body sensing. *Proceedings of the CHI Conference on Human Factors in Computing Systems*, 2018.

**SUBMISSIONS &
PREPRINTS**

1. Inferix Team: Tianyu Feng, Yizeng Han, Jiahao He, Yuanyu He, Xi Lin, Teng Liu, Hanfeng Lu, Jiasheng Tang, Wei Wang, Zhiyuan Wang, Jichao Wu, Mingyang Yang, Yinghao Yu, Zeyu Zhang, Bohan Zhuang. Inferix: A Block-Diffusion based Next-Generation Inference Engine for World Simulation. *Arxiv*, 2025.
2. Zeyu Zhang, Shuning Chang, Yuanyu He, Yizeng Han, Jiasheng Tang, Fan Wang, Bohan Zhuang. BlockVid: Block Diffusion for High-Quality and Consistent Minute-Long Video Generation. *Arxiv*, 2025.
3. Wangbo Zhao, Yizeng Han, Zhiwei Tang, Jiasheng Tang, Pengfei Zhou, Kai Wang, Bohan Zhuang, Zhangyang Wang, Fan Wang, Yang You. RAPID³: Tri-Level Reinforced Acceleration Policies for Diffusion Transformer. *Arxiv*, 2025.

*** Equal contribution**

INVITED TALKS -	Alibaba Damo Academy, China	10/2022
&	- Huawei Inc., China	01/2022
PRESENTATIONS -	Jiqizhixin, China	03/2021

RESEARCH PROJECTS	- Dynamic neural network and its interpretability for resource-constrained scenarios, Tsinghua University	2020 - 2022
	- Chip-friendly network architecture design, Tsinghua University	2020 - 2022
	- Adaptive deep learning and visual methods, Tsinghua University	2019 - 2020

REVIEWING & Reviewer for

SERVICE	- IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) - International Journal of Computer Vision (IJCV) - IEEE Transactions on Neural Networks and Learning Systems (TNNLS) - IEEE Transactions on Circuits and Systems for Video Technology (TCSVT) - International Conference on Machine Learning (ICML) - Conference on Neural Information Processing Systems (NeurIPS) - International Conference on Learning Representations (ICLR) - Conference on Computer Vision and Pattern Recognition (CVPR) - International Conference on Computer Vision (ICCV) - European Conference on Computer Vision (ECCV) - The Association for the Advancement of Artificial Intelligence (AAAI) - Pattern Recognition (PR) - International Conference on Image and Graphics (ICIG)
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