

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	04/2023 - 12/2023
	Intern, Georgia Institute of Technology <i>Advisor:</i> Gregory D Abowd	06/2017 - 8/2017
AWARDS & HONORS	<ul style="list-style-type: none">- First Prize of CSIG Natural Science Award 2024- Outstanding Graduate of Tsinghua University 2024- Outstanding Graduate of Beijing 2024- Outstanding Doctoral Dissertation of Tsinghua University 2024- Comprehensive Excellence Scholarship, Tsinghua University 2023- National Scholarship, Ministry of Education of China 2022- Comprehensive Excellence Scholarship, Tsinghua University 2017- Comprehensive Excellence Scholarship, Tsinghua University 2016- Academic Excellence Scholarship, Tsinghua University 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. 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. <i>International Conference on Computer Vision (ICCV)</i>, 2023.5. Yizeng Han*, Zhihang Yuan*, Yifan Pu*, Chenhao Xue, Shiji Song, Guangyu Sun, Gao Huang. Latency-aware Spatial-wise Dynamic Networks. <i>Conference on Neural Information Processing Systems (NeurIPS)</i>, 2022.6. 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. <i>European Conference on Computer Vision (ECCV)</i>, 2022.7. Le Yang*, Yizeng Han*, Xi Chen, Shiji Song, Jifeng Dai, Gao Huang. Resolution adaptive networks for efficient inference. <i>Conference on Computer Vision and Pattern Recognition (CVPR)</i>, 2020.	

8. 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.
14. 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.
15. 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.
16. 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.
17. 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.
18. 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.
19. 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.
20. 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.
21. 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.
22. 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.

23. 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.
24. 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.
25. 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.
26. 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.
27. 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.
28. 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. 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. *Arxiv*, 2024.
2. Wangbo Zhao, Yizeng Han, Jiasheng Tang, Kai Wang, Yibing Song, Gao Huang, Fan Wang, Yang You. Dynamic Diffusion Transformer. *Arxiv*, 2024.

* **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 &
SERVICE

Reviewer for

- 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)