Yizeng Han

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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** **2018 - 2024**
Advisors: Shiji Song and Gao Huang

B.S., **Department of Automation, Tsinghua University** **2014 - 2018**
GPA Rank: 38/141

RESEARCH EXPERIENCE

Intern, Megvii Technology **04/2023 - 12/2023**
Advisor: Xiangyu Zhang
Intern, Georgia Institute of Technology **06/2017 - 8/2017**
Advisor: Gregory D Abowd

AWARDS & HONORS

- 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

1. **Yizeng Han***, Gao Huang*, Shiji Song, Le Yang, Honghui Wang, Yulin Wang. Dynamic neural networks: a survey. *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 2021.

2. **Yizeng Han***, Zeyu Liu*, Zhihang Yuan*, Yifan Pu, Gao Huang, Shiji Song. Latency-aware Unified Dynamic Networks For Efficient Image Recognition. *IEEE Transactions on Pattern Analysis and Machine Intelligence* (**TPAMI**), 2024.

3. **Yizeng Han**, Gao Huang, Shiji Song, Le Yang, Yitian Zhang, Haojun Jiang. Spatially adaptive feature refinement for efficient inference. *IEEE Transactions on Image Processing* (**TIP**), 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. *International Conference on Computer Vision* (**ICCV**), 2023.

5. **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.

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. *European Conference on Computer Vision* (**ECCV**), 2022.

7. 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.

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. 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.

11. 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.

12. Le Yang, Ziwei Zheng, textbfYizeng Han, Hao Cheng, Shiji Song, Gao Huang, Fan Li. DyFADet: Dynamic Feature Aggregation for Temporal Action Detection. *European Conference on Computer Vision* (**ECCV**), 2024.

13. 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.

14. 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.

15. 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.

16. 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.

17. 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.

18. 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.

19. 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.

20. 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.

21. 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.

22. 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, Jiasheng Tang, **Yizeng Han**, Yibing Song, Kai Wang, Gao Huang, Fan Wang, Yang You. Dynamic tuning towards parameter and inference efficiency for vit adaptation. *In submission.*

1. 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. *In submission.*

2. 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. Demystify Mamba in Vision: A Linear Attention Perspective. *In submission.*

3. Le Yang, Ziwei Zheng, **Yizeng Han**, Shiji Song, Gao Huang, Fan Li. OStr-DARTS: Differentiable Neural Architecture Search based on Operation Strength. *In submission.*

* Equal contribution

INVITED TALKS & PRESENTATIONS	- Alibaba Damo Academy, China	10/2022
	- Huawei Inc., China	01/2022
	- 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)
- Pattern Recognition (PR)
- International Conference on Image and Graphics (ICIG)