

# HAORAN YOU

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## EDUCATION

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<b>Georgia Institute of Technology</b> <i>Transferred Ph.D. supervised by Prof. Yingyan Lin, Computer Science (CS)</i>	Atlanta, Georgia Dec. 2022 - Present
<b>Rice University</b> <i>M.S. supervised by Prof. Yingyan Lin, Electrical and Computer Engineering (ECE)</i>	Houston, Texas Sep. 2019 - Dec. 2022
<b>Huazhong University of Science and Technology (HUST)</b> <i>Bachelor of Electronic Information Engineering</i>	Wuhan, China Sep. 2015 - Jul. 2019

## RESEARCH INTERESTS

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- Efficient and Automated Machine Learning (ICML, NeurIPS, ICLR, AAAI, CVPR, ECCV, TNNLS, TMLR)
- Algorithm and Hardware Accelerator Co-Design (ISCA, HPCA, MICRO, ICCAD, ISLPED)

## PUBLICATIONS

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- **H. You**, C. Li, P. Xu, Y. Fu, Y. Wang, X. Chen, R.G. Baraniuk, Z. Wang, Y. Lin.  
*Selected as an ICLR Spotlight ! [Link]*  
[Drawing Early-Bird Tickets: Towards More Efficient Training of Deep Networks](#). **ICLR 2020 Spotlight Oral**
- **H. You**, Z. Sun, H. Shi, Z. Yu, Y. Zhao, Y. Zhang, C. Li, B. Li, Y. Lin.  
*Selected as the Meta Faculty Research Award of 2022 ! [Link]*  
[ViTCoD: Vision Transformer Acceleration via Dedicated Algorithm and Accelerator Co-Design](#). **HPCA 2023**
- **H. You**, Y. Zhao, Z. Yu, C. Wan, Y. Fu, C. Li, S. Zhang, S. Wu, J. Yuan, Y. Zhang, Vivek B., Ashok V., Z. Li, Y. Lin.  
*Selected as the IEEE Micro's Top Pick of 2023 ! [Link]*  
[EyeCoD: Eye Tracking System Acceleration via FlatCam-Based Algorithm and Accelerator Co-Design](#). **ISCA 2022**
- **H. You**, H. Shi, Y. Guo, Y. Lin.  
[ShiftAddViT: Mixture of Multiplication Primitives Towards Efficient Vision Transformer](#). **NeurIPS 2023**
- **H. You**, Y. Xiong, X. Dai, B. Wu, P. Zhang, H. Fan, P. Vajda, Y. Lin.  
[Castling-ViT: Compressing Attention via Switching Towards Linear-Angular Attention at ViT Inference](#). **CVPR 2023**
- **H. You**, B. Li, Z. Sun, X. Ouyang, Y. Lin  
[SuperTickets: Drawing Task-Agnostic Lottery Tickets from Supernet via Jointly Searching and Pruning](#). **ECCV 2022**
- **H. You**, B. Li, H. Shi, Y. Lin  
[ShiftAddNAS: Hardware-Inspired Search for More Accurate and Efficient Neural Networks](#). **ICML 2022**
- **H. You**, Z. Lu, Z. Zhou, Y. Fu, Y. Lin.  
[Early-Bird GCNs: Graph-Network Co-Optimization Towards More Efficient GCN Training and Inference](#). **AAAI 2022**
- **H. You**, T. Geng, Y. Zhang, A. Li, Y. Lin.  
[GCoD: Graph Convolutional Network Acceleration via Dedicated Algorithm and Accelerator Co-Design](#). **HPCA 2022**
- **H. You**, X. Chen, Y. Zhang, C. Li, S. Li, Z. Liu, Z. Wang, Y. Lin  
[ShiftAddNet: A Hardware-Inspired Deep Network](#). **NeurIPS 2020**

- **H. You**, R. Balestriero, Z. Lu, Y. Kou, Y. Lin, R.G. Baraniuk.  
[Max-Affine Spline Insights Into Deep Network Pruning](#). **TMLR 2022**
- **H. You**, Y. Cheng, T. Cheng, C. Li, P. Zhou.  
[Bayesian Cycle-Consistent GANs via Marginalizing Latent Sampling](#). **IEEE TNNLS**
- **H. You**, T. Geng, C. Wan, Q. An, Y. Zhang, Z. Lu, Y. Sun, C. Li, Y. Zhao, Y. Lin.  
[HA-GCN: Hardware-Aware Graph Convolutional Networks Compression](#). **Under Review**
- Y. Fu, **H. You**, Y. Zhao, Y. Wang, C. Li, K. Gopalakrishnan, Z. Wang, Y. Lin.  
[FracTrain: Fractionally Squeezing Bit Savings Both Temporally and Spatially for Efficient DNN Training](#). **NeurIPS 2020**
- H. Shi, **H. You**, Y. Zhao, Z. Wang, Y. Lin.  
[NASA: Neural Architecture Search and Acceleration for Hardware Inspired Hybrid Networks](#). **ICCAD 2022**
- Y. Zhang, **H. You**, Y. Fu, T. Geng, A. Li, Y. Lin  
[G-CoS: GNN-Accelerator Co-Search Towards Both Better Accuracy and Efficiency](#). **ICCAD 2021**
- C. Li, T. Chen, **H. You**, Z. Wang, Y. Lin.  
[HALO: Hardware-Aware Learning to Optimize](#). **ECCV 2020**
- Y. Zhao, Z. Li, **H. You**, Y. Fu, Y. Zhang, C. Li, C. Wan, S. Wu, X. Ouyang, V. Boominathan, A. Veeraraghavan, Y. Lin.  
[Won the first place in University Best Demonstration at DAC 2022 ! \[Link\]](#)  
[i-FlatCam: A 253 FPS, 91.49  \$\mu\$ J/Frame Ultra-Compact Intelligent Lensless Camera System for Eye Tracking](#). **VLSI 2022**
- Y. Zhao, X. Chen, Y. Wang, C. Li, **H. You**, Y. Fu, Y. Xie, Z. Wang, Y. Lin.  
[SmartExchange: Trading Higher-cost Memory Storage/Access for Lower-cost Computation](#). **ISCA 2020**
- T. Geng, C. Wu, Y. Zhang, C. Tan, C. Xie, **H. You**, M. Herbordt, Y. Lin, A. Li  
[I-GCN: A GCN Accelerator with Runtime Locality Enhancement through Islandization](#). **MICRO 2021**
- X. Chen, Y. Zhao, Y. Wang, P. Xu, **H. You**, C. Li, Y. Fu, Y. Lin, Z. Wang  
[SmartDeal: Re-Modeling Deep Network Weights for Efficient Inference and Training](#). **IEEE TNNLS**
- Y. Zhang, Y. Fu, W. Jiang, C. Li, **H. You**, M. Li, V. Chandra, Y. Lin  
[DIAN: differentiable accelerator-network co-search towards maximal DNN efficiency](#). **ISLPED 2021**
- C. Li, Z. Yu, Y. Fu, Y. Zhang, Y. Zhao, **H. You**, Q. Yu, Y. Wang, C. Hao, Y. Lin.  
[HW-NAS-Bench: Hardware-Aware Neural Architecture Search Benchmark](#). **ICLR 2021 Spotlight Oral**
- Y. Fu, Z. Ye, J. Yuan, S. Zhang, S. Li, **H. You**, Y. Lin.  
[Gen-NeRF: Efficient and Generalizable Neural Radiance Fields via Algorithm-Hardware Co-Design](#). **ISCA 2023**
- S. Li, C. Li, W. Zhu, B. Yu, Y. Zhao, C. Wan, **H. You**, H. Shi, Y. Lin  
[Instant-3D: Instant Neural Radiance Fields Training Towards Real-Time AR/VR 3D Reconstruction](#). **ISCA 2023**
- Z. Yu, Y. Fu, S. Wu, M. Li, **H. You**, Y. Lin.  
[LDP: Learnable Dynamic Precision for Efficient Deep Neural Network Training and Inference](#). **TinyML 2022**

## RESEARCH EXPERIENCE

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<b>EIC Lab, Georgia Institute of Technology, Atlanta, Georgia</b> <i>Under the instruction of Prof. Yingyan Lin</i>	Dec. 2022 - Present
<b>EIC Lab, Rice University, Houston, Texas</b> <i>Under the instruction of Prof. Yingyan Lin</i>	Sep. 2019 - Dec. 2022
<b>Meta, Burlingame, California</b> <i>Mentors/Peers: Dr. Yunyang Xiong, Peizhao Zhang, Xiaoliang Dai, Bichen Wu</i>	May. 2022 - Dec. 2022

**Baidu USA, Sunnyvale, California**

May. 2021 - Dec. 2021

*Under the instruction of Dr. Baopu Li*

**WNLO & Microsoft, Wuhan, China**

Jan. 2018 - Dec. 2018

*Under the instruction of Dr. Yu Cheng and Prof. Pan Zhou*

## SELECTED AWARDS

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- Haoran won First Place in [ACM Student Research Competition \(SRC\) at ICCAD](#) ! Nov. 2023
- ICCAD 2023 Student Travel Grant ! Oct. 2023
- Haoran was selected as one of the [ML and Systems Rising Stars of 2023](#) ! May. 2023
- Haoran won the [Best Poster Award](#) at the SCS Poster Competition of GaTech ! Apr. 2023
- Haoran was selected by GaTech to receive the [Outstanding Graduate Research Assistant Award](#) ! Mar. 2023
- [EyeCoD \(ISCA'22\)](#) was selected for being the [IEEE Micro's Top Pick of 2023](#) ! Jan. 2023
- HPCA 2023 Student Travel Grant ! 2022 - 2023
- Haoran got PhD Growth Annual Rock Star Award in EIC Lab ! 2022 - 2023
- [ViTCoD \(HPCA'23\)](#) was selected for [Meta Faculty Research Award of 2022](#) ! Nov. 2022
- Our [i-FlatCam](#) won First Place in [University Demo Best Demonstration at DAC Conference](#) ! Jul. 2022
- ISCA 2022 Student Travel Grant ! Jun. 2022
- Samsung Scholarship ! 2017 - 2018
- International Interdisciplinary Contest in Modeling (ICM), Meritorious Winner ! Apr. 2018
- Selected as *Outstanding Undergraduates in Term of Academic Performance*, (HUST 1%) ! Dec. 2017
- The Eighth Chinese Mathematics Competition (CMC), First Price (China 5%) ! Nov. 2016

## CONFERENCE PRESENTATION

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- Semiconductor Research Corporation (SRC) TECHCON, 2023 [[Link](#)]
- The IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023 [[Link](#)]
- The 50th International Symposium on Computer Architecture (ISCA), 2023 [[Workshop Link](#)]
- The 29th International Symposium on High-Performance Computer Architecture (HPCA), 2023 [[Link](#)]
- European Conference on Computer Vision (ECCV), 2022 [[Link](#)]
- The 49th International Symposium on Computer Architecture (ISCA), 2022 [[Link](#)]
- The 39th International Conference on Machine Learning (ICML), 2022 [[Link](#)]
- The 28th International Symposium on High-Performance Computer Architecture (HPCA), 2022 [[Link](#)]
- The 36th AAAI Conference on Artificial Intelligence (AAAI), 2022 [[Link](#)]
- Ken Kennedy AI and Data Science Conference, 2021 [[Link](#)]
- The 8th International Conference on Learning Representations (ICLR), 2020 [[Link](#)]
- The 34th Conference on Neural Information Processing Systems (NeurIPS), 2020 [[Link](#)]

## INVITED TALKS

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- Invited Speaker at University of Rochester IntelliArch Lab, 2023 [[Link](#)]
- Invited Speaker at ISCA AutoDL Workshop, 2023 [[Link](#)]
- Invited Speaker at UT Austin Energy-Aware Computing Group, 2023 [[Link](#)]
- Invited Speaker at the Tutorial in Asian Conference on Computer Vision, 2022 [[Link](#)]

## PC OR REVIEWER SERVICES

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- 2024: ICLR; AAAI, CVPR
- 2023: ICLR; CVPR; MLSys; ICML; ICCV; NeurIPS; IEEE TCAS-II
- 2022: CVPR; ICML; ICLR; NeurIPS; ECCV; AAAI; JCST;
- 2021: ICML; NeurIPS; ICLR; MLSys; IEEE TNNLS;
- 2020: ICML; ICLR; CVPR;

## **MENTORING EXPERIENCE**

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- Huihong Shi (Ph.D. Student), Published two 1st author ICCAD'22 and TCAS-I journal papers, and co-authored ICML'22, HPCA'23, and TMLR journal papers, Next move: PhD@NanJing University
- Zhanyi Sun (B.S. Student), Published two 2nd author HPCA'23 and ECCV'22 papers, Next move: MS@CMU
- Zhihan Lu (B.S. Student), Published two 2nd author AAAI'22 and TMLR journal paper, Next move: MS@CMU
- Shang Wu (M.S. Student), Published co-authored ISCA'22/TMLR, Next move: PhD@Northwestern University
- Xu Ouyang (M.S. Student), Published one co-authored ECCV'22 paper, Next move: PhD@University of Virginia
- Zijian Zhou (B.S. Student), Published one co-authored AAAI'22 paper, Next move: MS@Rice University
- Yi Sun (B.S. Student), Submitted a co-authored paper, Next move: MS@CMU
- Yutong Kou (B.S. Student), Submitted a co-authored paper, Next move: PhD@HUST

## **VOLUNTEERING SERVICE**

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- Student organization helper and website developer for [EECS Rising Stars Workshop of 2023](#).