

# Yang Sui

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## RESEARCH INTERESTS

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Efficient learning and inference of deep neural networks on computer vision tasks:

- **Model pruning and sparsification.**
- **Low-rank approximation.**
- **Model quantization.**
- **Efficient Vision Transformer.**
- **Neural Image Compression.**

## ACADEMIC EXPERIENCE

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### Georgia Institute of Technology

*Incoming Postdoc. Work with Prof. Saman Zonouz*

Atlanta, GA

01/2024 -

## EDUCATION

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### Rutgers University

*Ph.D. candidate in the Dept. of Electrical and Computer Engineering*

- GPA: 4.0/4.0

New Brunswick, NJ

01/2020 - Expected 12/2023

### Jilin University

*Master of Science in the Dept. of Electronic Science and Engineering*

Changchun, Jilin

09/2016 - 07/2019

### Jilin University

*Bachelor of Engineering in the Dept. of Electronic Science and Engineering*

Changchun, Jilin

09/2012 - 07/2016

## PUBLICATIONS

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*Authors with \* signs contribute equally to the papers.*

- **In submission**

Yang Sui, Wanzhao Yang, Miao Yin, Yu Gong, Bo Yuan.

“Co-Exploring Sparsification and Low-Rank Decomposition for Compact DNNs.”

- **In submission**

Yang Sui, Ding Ding, Xiang Pan, Xiaozhong Xu, Shan Liu, Bo Yuan, Zhenzhong Chen.

“Corner-to-Center Long-range Context Model for Efficient Learned Image Compression.”

- **[AAAI 2023 (Oral)]**

Huy Phan, Miao Yin, Yang Sui, Bo Yuan, Saman Zonouz.

“CSTAR: Towards Compact and STructured Deep Neural Networks with Adversarial Robustness.”

- **[AAAI 2023 (Oral)]**

Jinqi Xiao, Chengming Zhang, Yu Gong, Miao Yin, Yang Sui, Lizhi Xiang, Dingwen Tao, Bo Yuan.

“HALOC: Hardware-Aware Automatic Low-Rank Compression for Compact Neural Networks.”

- **[AAAI 2023 Workshop (Best Paper Runner-Up Award)]**

Yang Sui, Wanzhao Yang, Miao Yin, Yu Gong, Bo Yuan.

“Towards Sparse and Low-rank Neural Networks with Hybrid Compression.”

- **[AAAI 2023 Workshop]**

Yang Sui, Miao Yin, Bo Yuan.

“Training Low-Rank CNNs with Orthogonality From Scratch.”

- **[IEEE TC]**

Yu Gong, Miao Yin, Lingyi Huang, Chunhua Deng, Yang Sui, Bo Yuan.

“Algorithm and Hardware Co-Design of Energy-Efficient LSTM Networks for Video Recognition With Hierarchical Tucker Tensor Decomposition.”

- **[CVPR 2022]**

Miao Yin, Yang Sui, Wanzhao Yang, Xiao Zang, Yu Gong, Bo Yuan.

“HODEC: Towards Efficient High-Order DEcomposed Convolutional Neural Networks.”

- [NeurIPS 2021]  
Yang Sui, Miao Yin, Yi Xie, Huy Phan, Saman Zonouz, Bo Yuan.  
“CHIP: CHannel Independence-based Pruning for Compact Neural Networks.”
- [ICCAD 2021]  
Boyang Zhang\*, Yang Sui\*, Lingyi Huang, Siyu Liao, Chunhua Deng and Bo Yuan.  
“Algorithm and Hardware Co-design for Deep Learning-powered Channel Decoder: A Case Study.”
- [ISCA 2021]  
Chunhua Deng, Yang Sui, Siyu Liao, Xuehai Qian and Bo Yuan.  
“GoSPA: An Energy-efficient High-performance Globally Optimized SParse Convolutional Neural Network Accelerator.”
- [CVPR 2021]  
Miao Yin, Yang Sui, Siyu Liao, Bo Yuan.  
“Towards Efficient Tensor Decomposition-Based DNN Model Compression With Optimization Framework.”

## WORKING EXPERIENCE

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### Tencent Americas

*Research Intern*

Internship

05/2022 - Present

- Efficient Vision Transformer.
- Efficient Neural Image Compression.

### JD

*Algorithm Engineer*

Full-time

07/2019 - 01/2020

- Face verification and recognition over tens of millions of data.
- Provide the face-ID verification algorithms and models for banks of Thailand.

### Baidu

*Research & Development Engineer*

Internship

03/2018 - 12/2018

- **Initiator** of Paddle-Lite (Deep learning framework on mobile, embedded, and IoT devices) with **6.4k stars**.
- Implement and efficiently fuse the convolutional layers, normalized layers, activation functions, etc. in Paddle-Lite with C++ and assembly based on neon instructions without third-party libraries.
- Design specialized calculation process of various types of convolutional operations.

## REVIEWER ACTIVITIES

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PC members and Reviewer :

- **KDD**, ACM SIGKDD Conference on Knowledge Discovery and Data Mining.
- **NeurIPS**, Conference on Neural Information Processing Systems.
- **ECCV**, European Conference on Computer Vision.
- **ICML**, International Conference on Machine Learning.
- **CVPR**, International Conference on Computer Vision and Pattern Recognition.
- **AAAI**, AAAI Conference on Artificial Intelligence.
- **ISCAS**, The IEEE International Symposium on Circuits and Systems.
- CVPR Workshop on Transformers for Vision.
- **TNNLS**, IEEE Transactions on Neural Networks and Learning Systems.

## TEACHING ASSISTANT

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Rutgers University-New Brunswick

- 2020 Fall: 14:332:351 Programming Methodology II.