

Geng Yang

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EDUCATION

- **Ph.D. Candidate in Information and Communication Engineering** Sep. 2019– Dec. 2024 (Exp.)
State Key Lab of Integrated Service Networks, Xidian University, Xi'an, Shaanxi, China
Advisor: Prof. [Yunsong Li](#) and Prof. [Jie Lei](#)
GPA: 89.8/100
- **B.S. in Communication Engineering** Aug. 2015 – Jun. 2019
School of Telecommunications Engineering, Xidian University, Xi'an, Shaanxi, China
GPA: 3.7 (4.0)

RESEARCH INTERESTS

- FPGA-based Deep Learning Inference Acceleration
- Algorithm-Hardware Co-design

PUBLICATION

- 1 **G. Yang**, Jie Lei, Zhenman Fang, Jiaqing Zhang, Junrong Zhang, Weiying Xie, Yunsong Li, E4SA: An Ultra-Efficient Systolic Array Architecture for 4-Bit Convolution Neural Networks. The 32nd ACM/SIGDA International Symposium on Field-Programmable Gate Arrays (FPGA2024 Poster)
- 2 **Geng Yang**, Jie Lei, Zhenman Fang, Yunsong Li, Jiaqing Zhang, Weiying Xie, HyBNN: Quantifying and Optimizing Hardware Efficiency of Binary Neural Networks. ACM Transactions on Reconfigurable Technology and Systems (TRETs 2023, FPT 2023 Journal Track, FCCM 2023 Poster)
- 3 **Geng Yang**, Jie Lei, Weiying Xie, Zhenman Fang, Yunsong Li, Jiaxuan Wang, Xin Zhang, Algorithm/Hardware Co-Design for Real-Time On-Satellite CNN based Ship Detection in SAR Imagery. IEEE Transactions on Geoscience and Remote Sensing, 2022 (IEEE TGRS)
- 4 Jie Lei, **Geng Yang**, Weiying Xie, Yunsong Li, Xiuping Jia, A Low-Complexity Hyperspectral Anomaly Detection Algorithm and its FPGA Implementation. IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, 2020, 14:907-921 (IEEE JSTARS)
- 5 Xin Zhang, Weiying Xie, Yunsong Li, Jie Lei, Qian Du, **Geng Yang**, Rank-Aware Generative Adversarial Network for Hyperspectral Band Selection. IEEE Transactions on Geoscience and Remote Sensing, 2022, 60:1-12 (IEEE TGRS)
- 6 Jiaqing Zhang, Jie Lei, Weiying Xie, Yunsong Li, Xiuping Jia, **Geng Yang**. Guided Hybrid Quantization for Object Detection in Multimodal Remote Sensing Imagery via One-to-one Self-teaching. IEEE Transactions on Geoscience and Remote Sensing, 2022 (IEEE TGRS)
- 7 Jie Lei, **Geng Yang**, Mengbo Zhang, Weiying Xie, Yunsong Li, Tao Jiang, Kai Liu, Long Gao, Patent: CN202110484719.7 on April 30, 2021
- 8 Jie Lei, Jiaxuan Wang, **Geng Yang**, Weiying Xie, Yunsong Li, Object Detection Joint Pruning and Quantization for SAR Imagery, Patent, CN202111488427.7 on December 8, 2021

Contest

- ① National contest for DNN model inference on a cloud FPGA system supervised by Prof. Jie Lei, the **second prize** and ¥3,690,000 project funding, **Student Leader**, Jun. 2021
- ② National contest for DNN model inference on an embedded FPGA system supervised by Prof. Weiying Xie, the **third prize** and ¥950,000 project funding, **Student Leader**, Jun. 2021

AWARDS

- Innovation Fund of Xidian University in 2022, 2023
- GuoRui Scholarship of the 14th Research Institute of China Electronics Technology Group Corporation in 2021, 2022
- Second Scholarship of Xidian University in 2020, 2021, 2022, 2023
- Collaboration-Innovation Scholarship of China Electronics Technology Group Corporation and Xidian University in 2020
- Outstanding Graduate Student of Xidian University in 2019

OTHER HIGHLIGHTS

- Conference Secondary Reviewer for FPGA 2024, DAC 2024, DAC 2023, DATE2024

- Oral presentation titled *HyBNN: Quantifying and Optimizing Hardware Efficiency of Binary Neural Networks* at International Conference on Field-Programmable Technology (FPT 2023, Yokohama, Japan) in Dec. 2023.
- Gave a report titled *Hyperspectral Anomaly Detection Algorithm and Its Hardware Implementation for on-satellite Real-time Processing* (**Excellent Report**) at the 6th National Imaging Spectroscopic Earth Observation Symposium (Ningbo, China) in Oct. 2021.
- Awarded with **High Distinction** in Academic English and Research Communication Skills of The University of Adelaide (online) in 2021