# 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 Neutral 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, XinZhang, 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, **GengYang**, 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, **GengYang**. 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, Jiaxvan 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 an cloud FPGA system supervised by Prof. Jie Lie, 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 Technolohy (FPT 2023, Yokohama, Janpan) 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