

Jiaming Liu



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Education



- 2022 – 2025  **Ph.D. Fudan University, State Key Laboratory of Integrated Chips and Systems**
Subject: *Electronic and Information Engineering.*
Major: *Artificial Intelligence, Image Processing, Digital Integrated Circuit, Electronic Design Automation*
- 2019 – 2022  **M.Sc. Southwest Jiaotong University, Institute of Microelectronics**
Subject: *Circuits and Systems.*
Major: *Digital Integrated Circuit, Channel Coding*
- 2015 – 2019  **B.Sc. Southwest Jiaotong University, Institute of Microelectronics**
Subject: *Electronic Science and Technology.*
Major: *Digital Integrated Circuit*

Research Publications

Journal Articles

- 1 Z. Hao, H. Sun, G. Xu, **J. Liu**, X. Xiong, *et al.*, “Fast transform kernel selection based on frequency matching and probability model for av1,” **IEEE Transactions on Broadcasting**, vol. 70, no. 2, pp. 693–707, 2024, (Q1).  DOI: 10.1109/TBC.2024.3374078.
- 2 **J. Liu**, Z. Hao, L. Zhao, J. Lian, J. Tao, *et al.*, “A low valid throughput loss ldpc codec architecture with variable code rate,” **IEEE Transactions on Circuits and Systems II: Express Briefs**, vol. 71, no. 5, pp. 2644–2648, 2024, (Q2/TOP).  DOI: 10.1109/TCSII.2023.3344221.
- 3 R. Zhu, Z. Tu, **J. Liu**, A. C. Bovik, and Y. Fan, “Mwformer: Multi-weather image restoration using degradation-aware transformers,” **IEEE Transactions on Image Processing**, pp. 1–1, 2024, (Q1/TOP/CCF-A).  DOI: 10.1109/TIP.2024.3501855.
- 4 **J. Liu** and Q. Feng, “A miniaturized ldpc encoder: Two-layer architecture for ccstds near-earth standard,” **IEEE Transactions on Circuits and Systems II: Express Briefs**, vol. 68, no. 7, pp. 2384–2388, 2021, (Q2/TOP).  DOI: 10.1109/TCSII.2021.3054334.




Conference Proceedings

- 1 **J. Liu**, Z. Liu, X. Huang, R. Zhu, Q. Zheng, *et al.*, “Auto-isp: An efficient real-time automatic hyperparameter optimization framework for isp hardware system,” in **Proceedings of the 61st ACM/IEEE Design Automation Conference (DAC)**, (CCF-A), New York, NY, USA, 2024.  DOI: 10.1145/3649329.3655952.
- 2 S. Wang, **J. Liu**, R. Zhu, J. Lian, C. Huang, *et al.*, “A lightweight cnn for detail enhancement and color correction of low-light capsule endoscopy,” in **2024 IEEE Biomedical Circuits and Systems Conference (BioCAS)**, 2024, pp. 1–5.
- 3 Y. Zhong, **J. Liu**, X. Huang, J. Liu, Y. Fan, *et al.*, “Cdcnet: A fast and lightweight dehazing network with color distortion correction,” in **IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)**, (CCF-B), 2024, pp. 3020–3024.  DOI: 10.1109/ICASSP48485.2024.10447111.

Patents

- 1 Q. Feng and J. Liu, *A efficient ldpc encoder circuit based on rate adaptation*, CN 113300717B, 2022.
- 2 Q. Feng and J. Liu, *A miniaturized ldpc encoder circuit based on rate adaptation*, CN 113285724B, 2022.
- 3 Q. Feng, J. Liu, and J. Cheng, *Joint decoding method and system based on bit-flip algorithm to accelerate soft decoding*, CN 112350738B, 2021.

Project

- 2022-2024  **Fudan University VIPLab - Alibaba Group DAMO Academy**
 Project①: *High-performance open-source IP design for image processor* (2022-2024)
 Project②: *deep learning-based video and image compression framework* (2023-2024)
 Project③: *deep learning-based face restoration* (2022)
- 2023-2024  **Fudan University VIPLab - NextVPU Co., Ltd.**
 Project①: *Automotive image processor IC design (tape out)*
- 2022-2023  **Fudan University VIPLab - Magewell Electronics Co., Ltd.**
 Project①: *FPGA implementation of a 4K@60FPS image processor IP design*

Competition

- 2021  **China Graduate Electronics Design Contest**
 Work: *Post-disaster Self-help Emergency Communications System* (Captain)
 Award①: *National TOP 2 (Star)* Award②: *National First Prize (No.1 in the group)*
 Award③: *The First Prize of Southwest Region*
-  **China Postgraduate IC Innovation Competition**
 Work: *The IC design for LDPC ECC Codec* (Captain)
 Award①: *National First Prize of X-EPIC* Award②: *National Second Prize*
- 2020  **China College IC Competition**
 Work: *The IC design for NAND FLASH Controller* (Captain)
 Award①: *National First Prize* Award②: *National Grand Prize of UNISOC*
 Award③: *The first Prize of Southwest Region* Award④: *Chengdu Hi-Tech Zone Special Award*

Miscellaneous Experience

Awards and Achievements

- 2022  **SiShiYangHua medals-Principal's Award**, Southwest Jiaotong University.
 **Provincial Outstanding Graduates**, Sichuan Province, China.
- 2021  **China National Scholarship**, Ministry of Education of the People's Republic of China.
 **Intel Fellowship**, Intel Corporation.
- 2020  **China National Scholarship**, Ministry of Education of the People's Republic of China.
 **Pacemaker to Outstanding Student**, Southwest Jiaotong University.
 **The First Prize Scholarship**, Southwest Jiaotong University.
 **Excellent Student Cadre**, Southwest Jiaotong University.