

LI, XIANBIN

(+852) 69740067 | xligt@connect.ust.hk

EDUCATION

Hong Kong University of Science and Technology (HKUST)

Sept. 2021 – Present

PhD candidate in Electronic and Computer Engineering

Supervisor: Prof. XU, Jiang

Huazhong University of Science and Technology (HUST)

Sept. 2017 – July 2021

Bachelor's Degree in Optical and Electronic Information

GPA: 3.97/4.00

Experimental class of excellence

Ranking: 2/21

RESEARCH INTERESTS & PUBLICATIONS

My research interest lies in Opto-Electronic (OE) hybrid computation, including interconnection networks, hardware acceleration on machine learning, LLM and post-quantum cryptography (PQC).

OE-Hybrid Interconnection Network

[C4] Chengeng Li*, Fan Jiang*, Shixi Chen, **Xianbin Li**, Jiaqi Liu, Wei Zhang, Jiang Xu. "Towards Scalable GPU System with Silicon Photonic Chiplet." Design, Automation and Test in Europe Conference and Exhibition (DATE), Valencia, Spain, March 2024.

[C5] Chengeng Li*, Fan Jiang*, Shixi Chen, **Xianbin Li**, Yinyi Liu, Lin Chen, Xiao Li, Jiang Xu*. "RONet: Scaling GPU System with Silicon Photonic Chiplet" IEEE/ACM International Conference on Computer-Aided Design (ICCAD), San Francisco, California, USA, October 2023

[S2] **Xianbin Li**, Chengeng Li, Fan Jiang, Shengyu Fan, Xianglong Deng, Guiming Shi, Wei Zhang, Jiang Xu, Mingzhe Zhang. "Lux: Elevated 3D stacking GPU-chiplet through optical vertical interconnect." (*Under submission to International Symposium on High-Performance Computer Architecture (HPCA)*)

Photonic Accelerated Machine Learning

[C1] **Xianbin Li**, Yinyi Liu, Jiang Fan, Chengeng Li, Yuxiang Fu, Wei Zhang, Jiang Xu*; "NEOCNN: NTT-Enabled Optical Convolution Neural Network Accelerator." International Conference on Supercomputing (ICS), Kyoto, Japan, June 2024.

[C2] Yinyi Liu, Bohan Hu, Zhenguo Liu, Peiyu Chen, Linfeng Du, Jiaqi Liu, **Xianbin Li**, Wei Zhang, Jiang Xu*; "FIONA: Photonic-Electronic Co-Simulation Framework and Transferable Prototyping for Photonic Accelerator." IEEE/ACM International Conference on Computer-Aided Design (ICCAD), San Francisco, California, USA, October 2023

Photonic Accelerated Post-Quantum Cryptography (PQC)

[C3] **Xianbin Li**, Jiaqi Liu, Yuying Zhang, Yinyi Liu, Jiaxu Zhang, Chengeng Li, Shixi Chen, Yuxiang Fu, Fengshi Tian, Wei Zhang, Jiang Xu*; "PhotonNTT: Energy-efficient Parallel Photonic Number Theoretic Transform Accelerator." Design, Automation and Test in Europe Conference and Exhibition (DATE), Valencia, Spain, March 2024.

[S1] **Xianbin Li**, Yilan Zhu, Shengyu Fan, Xianglong Deng, Guiming Shi, Wei Zhang, Jiang Xu, Mingzhe Zhang; "Yaksha: Optical Fully Homomorphic Encryption Accelerator based on Fermat NTT." (*Under submission to IEEE Transactions on Computers (TC)*)

HONORS

National Scholarship (1.8%)

2018

Outstanding Undergraduates in Terms of Academic Performance (1%)

2018-2019

National Encouragement Scholarship (4.8%)

2019

ACADEMIC SERVICES

Journal & Conference Reviewer

MICRO, ISCA, CODES+ISSS, ASP-DAC, TCAD, TVLSI, TC, etc.