Xiaoxiao LIANG

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EDUCATION

Hong Kong University of Science and Technology (Guangzhou)　　　　2022 – Present

Ph.D. in Microelectronics, supervised by Prof. Yuzhe MA
Core Grade: 3.87/4.3

Hong Kong University of Science and Technology　　　　2020 – 2021

M.S. in Electronic Engineering
Core Grade: 4.0/4.3

Huazhong University of Science and Technology　　　　2016 – 2020

B.Eng. in Automation
Core Grade: 3.4/4.0

WORK EXPERIENCE

Hong Kong University of Science and Technology (Guangzhou)　　　　Jan. 2022 – Jul. 2022

Research Assistant　Advisor: Prof. Yuzhe MA

Mask optimization in VLSI manufacturing

Hong Kong University of Science and Technology　　　　Jul. 2021 – Dec. 2021

Research Assistant　Advisor: Prof. Xiaomeng LI

Federated framework building for medical image analysis

NOTABLE PROJECTS

Mask Optimization in VLSI Manufacturing

Jan. 2022 – Present

- Developed a reinforcement learning-based OPC technique
- Collected layout data and optimized masks using commercial EDA tools
- Independently implemented the proposed framework and completed the experiments
- Published a first-authored paper in *TCAD'24*
- One paper accepted by *DAC'24*

Privacy-Preserving Federated Framework for Medical Image Analysis

Jul. 2021 – Dec. 2021

- Addressed the data heterogeneity problem in federated semi-supervised learning
- Presented a novel FSSL method to model the uneven reliability of Non-IID clients
- Independently implemented the proposed framework and completed the experiments
- Published a first-authored paper in *CVPR'22*

Manipulated Human Face Recognition using CNNs (Undergraduate Final Year Project)

Nov. 2019 – Jun. 2020

- Designed a learning-basd manipulated face detection framework for both images and videos
- Formulated contrastive loss for critical feature extraction at face boundaries
- Designed and implemented a user-friendly graphical interface allowing real-time detection and marking on user-specified images and videos

Publications

Xiaoxiao Liang, Haoyu Yang, Kang Liu, Bei Yu, Yuzhe Ma, "CAMO: Correlation-Aware Mask Optimization with Modulated Reinforcement Learning". *To appear in the Design Automation Conference (DAC)*, 2024.

Xiaoxiao Liang, Yikang Ouyang, Haoyu Yang, Bei Yu, Yuzhe Ma, "RL-OPC: Mask Optimization With Deep Reinforcement Learning". *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2024.

Xiaoxiao Liang, Yiqun Lin, Huazhu Fu, Lei Zhu, Xiaomeng Li, "RSCFed: Random Sampling Consensus Federated Semi-supervised Learning". *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2022.

Honors and Awards

DAC Young Fellow	2024
Full Postgraduate Scholarship, HKUST(GZ)	2022-present
Excellent Student Scholarship, HKUST	2021
Outstanding Graduate	2020
Honorable Mentioned in the Mathematical Contest in Modeling and Interdisciplinary Contest in Modeling	2019
Academic Scholarship, HUST	2016-2017

Skills

- Languages
  English, Chinese

- Programming Language
  Python, C/C++, MATLAB

- Deep Learning Framework
  PyTorch, TensorFlow