YUZHE MA

Ph.D. Student ◇ Department of Computer Science & Engineering

Room 913, Ho Sin Hang Engineering Building ◇ The Chinese University of Hong Kong

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RESEARCH INTERESTS

- Machine learning with applications in CAD
- Design for manufacturability
- Physical design in VLSI CAD

EDUCATION

The Chinese University of Hong Kong, NT, Hong Kong Aug. 2016 – Present

Ph.D. student, Department of Computer Science & Engineering.

Advisor: Prof. Bei Yu

Sun Yat-sen University, Guangzhou, P.R. China Sep. 2011 – Jul. 2016

B.Eng., Microelectronics.

(GPA 92/100, RANK 1/64)

Dissertation: "Methodologies for Standard Cell Layout Migration"

EXPERIENCE

Cadence Design Systems, Inc., CA, USA May 2017 – Sep. 2017

Research Intern, Digital Design and Signoff Group

Topic: Deep Learning/Machine Learning in Placement

The Chinese University of Hong Kong, NT, Hong Kong Mar. 2016 – May 2016

Research Assistant, Department of Computer Science & Engineering

Topic: Standard Cell Synthesis

PUBLICATIONS

Journal Paper

Submitted

[J] **Yuzhe Ma**, Subhendu Roy, Jin Miao, Jiamin Chen, and Bei Yu, "Cross-layer Optimization for High Speed Adders: A Pareto Driven Machine Learning Approach", submitted to IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD).

[J] Haoyu Yang, Jing Su, Yi Zou, **Yuzhe Ma**, Bei Yu, and Evangeline F. Y. Young, "Layout Hotspot Detection with Feature Tensor Generation and Deep Biased Learning", submitted to IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD).

Accepted

[J1] Jin Miao, Meng Li, Subhendu Roy, **Yuzhe Ma**, and Bei Yu, "SD-PUF: Spliced Digital Physical Unclonable Function", accepted by IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (**TCAD**).

Conference Papers

[C5] Haoyu Yang, Shuhe Li, **Yuzhe Ma**, Bei Yu, and Evangeline F. Y. Young, "GAN–OPC: Mask Optimization with Lithography-guided Generative Adversarial Nets", ACM/IEEE Design Automation Conference (**DAC**), San Francisco, CA, June 24–28, 2018.

[C4] Chak-Wa Pui, Gengjie Chen, **Yuzhe Ma**, Evangeline F. Y. Young, and Bei Yu, "Clock-Aware Ultra-Scale FPGA Placement with Machine Learning Routability Prediction", IEEE/ACM International Conference on Computer-Aided Design (**ICCAD**), Irvine, CA, Nov. 13–16, 2017. (**Invited Paper**)

[C3] **Yuzhe Ma**, Jhih-Rong Gao, Jian Kuang, Jin Miao, and Bei Yu, "A Unified Framework for Simultaneous Layout Decomposition and Mask Optimization", IEEE/ACM International Conference on Computer-Aided Design (**ICCAD**), Irvine, CA, Nov. 13–16, 2017.

[C2] **Yuzhe Ma**, Xuan Zeng, and Bei Yu, "Methodologies for Layout Decomposition and Mask Optimization: A Systematic Review", IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC), Abu Dhabi, UAE, Oct. 23–25, 2017. (**Invited Paper**)

[C1] Subhendu Roy, **Yuzhe Ma**, Jin Miao, and Bei Yu, "A Learning Bridge from Architectural Synthesis to Physical Design for Exploring Power Efficient High-Performance Adders", IEEE/ACM International Symposium on Low Power Electronics and Design (**ISLPED**), Taipei, Taiwan, July 24–26, 2017.

SELECTED AWARDS AND HONORS

Full Postgraduate Studentship	The Chinese University of Hong Kong	2016 –
National Encouragement Scholarship	Sun Yat-sen University	2013, 2014, 2015
First Class Outstanding Academic Scholarship	Sun Yat-sen University	2013, 2014, 2015
Merit Student of Sun Yat-sen University	Sun Yat-sen University	2013, 2014, 2015

GRADUATE LEVEL COURSES

ENGG5501: Foundations of Optimization
ENGG5103: Data Mining
SEEM5350: Numerical Optimization
CSCI5580: Online Algorithms for Machine Learning and Optimization

TECHNICAL SKILLS

Languages	C/C++, Python, MATLAB, LaTeX
Operating Systems	Linux/UNIX, MacOS
Toolkits	TensorFlow