

# YUZHE MA

Ph.D. Student ◊ Department of Computer Science & Engineering  
Room 913, Ho Sin Hang Engineering Building ◊ The Chinese University of Hong Kong  
yzma@cse.cuhk.edu.hk

## RESEARCH INTERESTS

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

## EDUCATION

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<b>The Chinese University of Hong Kong, NT, Hong Kong</b> Ph.D. student, Department of Computer Science & Engineering. Advisor: Prof. Bei Yu	Aug. 2016 – Present
<b>Sun Yat-sen University, Guangzhou, P.R. China</b> B.Eng., Microelectronics. (GPA 92/100, RANK 1/64) Dissertation: “A Standard Cell Layout Migration Technique”	Sep. 2011 – Jul. 2016

## EXPERIENCE

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<b>Cadence Design Systems, Inc., CA, USA</b> Research Intern, Digital Design and Signoff Group Topic: Deep Learning/Machine Learning in Placement	May 2017 – Sep. 2017
<b>The Chinese University of Hong Kong, NT, Hong Kong</b> Research Assistant, Department of Computer Science & Engineering Topic: Standard Cell Synthesis	Mar. 2016 – May 2016

## PUBLICATIONS

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### Journal Paper

#### Submitted

- [J] **Yuzhe Ma**, Subhendu Roy, Jin Miao, Jiamin Chen, 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, 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

- [C4] Chak-Wa Pui, Gengjie Chen, **Yuzhe Ma**, Evangeline F. Y. Young and Bei Yu, “Clock-Aware UltraScale 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

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

## GRADUATE LEVEL COURSES

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ENGG5501: Foundations of Optimization  
 ENGG5103: Data Mining  
 SEEM5350: Numerical Optimization

## TECHNICAL SKILLS

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<b>Languages</b>	C/C++, Python, MATLAB, $\text{\LaTeX}$
<b>Operating Systems</b>	Linux/UNIX, MacOS
<b>Toolkits</b>	TensorFlow