

# WUXI LI

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## RESEARCH INTERESTS

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Design automation and optimization for VLSI

## EDUCATION

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- University of Texas at Austin, TX** *Jan. 2016 – Aug. 2019*  
Ph.D., Department of Electrical and Computer Engineering  
Dissertation: Placement Algorithms for Large-Scale Heterogeneous FPGAs  
Advisor: David Z. Pan  
(GPA 4.0/4.0)
- University of Texas at Austin, TX** *Aug. 2013 – Dec. 2015*  
M.S., Department of Electrical and Computer Engineering  
(GPA 4.0/4.0)
- Shanghai Jiao Tong University, Shanghai, China** *Sep. 2009 – Jul. 2013*  
B.S. with Highest Honors, Department of Microelectronics  
(GPA 90.1/100)

## EXPERIENCE

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- Xilinx, San Jose, CA** *Aug. 2019 – Present*  
Staff Software Engineer, Vivado Implementation Team
- Xilinx, San Jose, CA** *May 2018 – Aug. 2018*  
Software Development Intern, Vivado Implementation Team
- Cadence Design System, Austin, TX** *May 2016 – Dec. 2016*  
Software Development Intern, Clocking Team
- Apple, Austin, TX** *Jan. 2015 – Dec. 2015*  
Hardware Design Intern, SoC Clocking Team
- Apple, Cupertino, CA** *Sep. 2014 – Dec. 2014*  
Hardware Design Intern, SoC Methodology Team
- ARM, Austin, TX** *May 2014 – Aug. 2014*  
Hardware Design Intern, Memory Team

## PUBLICATIONS

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### Journal Articles

- [J5] **Wuxi Li**, David Z. Pan, “[A New Paradigm for FPGA Placement without Explicit Packing](#)”, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2018.
- [J4] Meng Li, Bei Yu, Yibo Lin, Xiaoqing Xu, **Wuxi Li**, David Z. Pan, “[A Practical Split Manufacturing Framework for Trojan Prevention via Simultaneous Wire Lifting and Cell Insertion](#)”, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2018.
- [J3] **Wuxi Li**, Yibo Lin, Meng Li, Shounak Dhar, David Z. Pan, “[UTPlaceF 2.0: A High-Performance Clock-Aware FPGA Placement Engine](#)”, ACM Transactions on Design Automation of Electronic Systems (TODAES), 2018. (1st-Place Award of ISPD 2017 Contest)
- [J2] **Wuxi Li**, Shounak Dhar, David Z. Pan, “[UTPlaceF: A Routability-Driven FPGA Placer with Physical and Congestion Aware Packing](#)”, IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD), 2017.
- [J1] **Wuxi Li**, Hang Yuan, Wei Xu, Kunling Geng, Guoxing Wang, “[An Optimization Procedure for Coil Design in a Dual Band Wireless Power and Data Transmission System](#)”, ECS Transactions (ECST), 2013.

## Conference Papers

- [C10] Mohamed B. Alawieh, **Wuxi Li**, Yibo Lin, Love Singhal, Mahesh Iyer, David Z. Pan, “High-Definition Routing Congestion Prediction for Large-Scale FPGAs”, IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), 2020.
- [C9] Mingjie Liu, **Wuxi Li**, Keren Zhu, Biying Xu, Yibo Lin, Linxiao Shen, Xiyuan Tang, Nan Sun, David Z. Pan, “S3DET: Detecting System Symmetry Constraints for Analog Circuits with Graph Similarity”, IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), 2020.
- [C8] **Wuxi Li**, Yibo Lin, David Z. Pan, “elfPlace: Electrostatics-based Placement for Large-Scale Heterogeneous FPGAs”, IEEE/ACM International Conference on Computer-Aided Design (ICCAD), 2019.
- [C7] Yibo Lin, Shounak Dhar, **Wuxi Li**, Haoxing Ren, Brucek Khailany, David Z. Pan, “[DREAMPlace: Deep Learning Toolkit-Enabled GPU Acceleration for Modern VLSI Placement](#)”, ACM/IEEE Design Automation Conference (DAC), 2019. (**Best Paper Award**)
- [C6] **Wuxi Li**, Stephen Yang, Mehrdad E. Dehkordi, David Z. Pan, “[Simultaneous Placement and Clock Tree Construction for Modern FPGAs](#)”, ACM International Symposium on Field-Programmable Gate Arrays (FPGA), 2019.
- [C5] Meng Li, Bei Yu, Yibo Lin, Xiaoqing Xu, **Wuxi Li**, David Z. Pan, “[A Practical Split Manufacturing Framework for Trojan Prevention via Simultaneous Wire Lifting and Cell Insertion](#)”, IEEE/ACM Asia and South Pacific Design Automation Conference (ASPDAC), 2018.
- [C4] **Wuxi Li**, Meng Li, Jiajun Wang, David Z. Pan, “[UTPlaceF 3.0: A Parallelization Framework for Modern FPGA Global Placement](#)”, IEEE/ACM International Conference on Computer-Aided Design (ICCAD), 2017. (**Invited Paper**)
- [C3] Wei Ye, Yibo Lin, Xiaoqing Xu, **Wuxi Li**, Yiwei Fu, Yongsheng Sun, Canhui Zhan, David Z. Pan, “[Placement Mitigation Techniques for Power Grid Electromigration](#)”, IEEE International Symposium on Low Power Electronics and Design (ISLPED), 2017.
- [C2] **Wuxi Li**, Shounak Dhar, David Z. Pan, “[UTPlaceF: A Routability-Driven FPGA Placer with Physical and Congestion Aware Packing](#)”, IEEE/ACM International Conference on Computer-Aided Design (ICCAD), 2016. (**Invited Paper, 1st-Place Award of ISPD 2016 Contest**)
- [C1] Wei Xu, Xiyun Li, **Wuxi Li**, Hang Yuan, Guoxing Wang, “[Live demonstration: An Optimization Software and a Design Case of a Novel Dual Band Wireless Power and Data Transmission System](#)”, IEEE International Symposium on Circuits and Systems (ISCAS), 2014.

## RELATED COURSES

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• EE382M: VLSI I	<i>Prof. Michael Orshansky</i>
• EE382N: Computer Architecture	<i>Prof. Aater Suleman</i>
• EE382V: Optimization Issues in VLSI CAD	<i>Prof. David Pan</i>
• EE382M: VLSI II	<i>Prof. Jacob Abraham</i>
• EE380L: Engineer Programming Languages	<i>Prof. Craig Chase</i>
• EE382V: VLSI Physical Design Automation	<i>Prof. David Pan</i>
• EE382N: High-Speed Computer Arithmetic	<i>Prof. Earl Swartzlander</i>
• EE382M: Verification of Digital Systems	<i>Dr. Jayanta Bhadra</i>
• INF385M: Database Management	<i>Dr. Stan Gunn</i>
• INF385T: Metadata Generation/Interface for Massive Dataset	<i>Prof. Unmil Karadkar</i>
• EE380N: Optimization in Engineering Systems	<i>Prof. Ross Baldick</i>
• CS383C: Numerical Analysis: Linear Algebra	<i>Prof. George Biros</i>

## SKILLS

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## Programming Languages

C/C++, CUDA, Perl, Python, Verilog

## EDA Tools

Cadence Virtuoso, Synopsys Design Compiler, Synopsys IC Compiler, Synopsys PrimeTime

## AWARDS AND HONORS

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Best Paper Award	DAC	2019
Silver Medal at ACM/SIGDA Student Research Competition	ACM/SIGDA	2018
George J. Heuer, Jr. Ph.D. Endowed Graduate Fellowship Fund	UT Austin	2018
3rd-Place Winner of Intern Showcase Presentation	Xilinx	2018
1st-Place Winner of Clock-Aware FPGA Placement Contest	ISPD	2017
1st-Place Winner of Routability-Driven FPGA Placement Contest	ISPD	2016
Graduation with Highest Honors, College Graduate Excellence Award of Shanghai	SJTU	2013
Excellent Bachelor Dissertation Award (Top 39/3900+)	SJTU	2013
Toshiba Electronics Scholarship	SJTU	2012