

# Yu Wang

Professor

Department of Electronic Engineering, Tsinghua University  
Room 4-303, Rohm Building, Tsinghua University, Beijing, China, 86-10-62772966  
yu-wang@mail.tsinghua.edu.cn <http://nicsefc.ee.tsinghua.edu.cn>

## Education

- 2002 - 2007 **Tsinghua University** Beijing, China  
Ph.D. (with honors) in Department of Electronic Engineering  
Thesis: *Optimization for the Leakage Current and Reliability in Digital Integrated Circuits*  
Advisor: Prof. Huazhong Yang, Co-advised by Prof. Yuan Xie
- 1998 - 2002 **Tsinghua University** Beijing, China  
B.S. in Electronic Engineering

## Professional Experience

- 2020.01-now **Tsinghua University** Beijing, China  
Chair of the Department of Electronic Engineering
- 2020.01-now **Tsinghua University** Beijing, China  
Dean of Institute for Electronics and Information Technology in Tianjin
- 2019.09-  
2020.01 **Stanford University** CA, USA  
Visiting Professor in the Department of Electrical Engineering
- 2019.01-now **Tsinghua University** Beijing, China  
Tenured Professor in the Department of Electronic Engineering
- 2015 - 2018 **Tsinghua University** Beijing, China  
Tenured Associate Professor in the Department of Electronic Engineering
- 2011 - 2015 **Tsinghua University** Beijing, China  
Associate Professor in the Department of Electronic Engineering
- 2011 - 2014 **Tsinghua University** Beijing, China  
Head of Research Institute of Circuits and Systems
- 2011 - 2013 **Imperial College** London, UK  
Visiting Scholar (4 months in total), with Prof. Wayne Luk
- 2007 - 2011 **Tsinghua University** Beijing, China  
Assistant Professor in the Department of Electronic Engineering
- 2008 - 2009 **Hong Kong University of Science and Technology** Hong Kong, China  
Visiting Scholar (3 months in total), with Prof. Jiang Xu
- 2007 **Microsoft Research Asia** Beijing, China  
Visiting Student/Scholar (6 months in total)

## Research Summary

Yu Wang has published more than 60 journals (48 IEEE/ACM journals) and more than 200 conference papers (13 DAC, 14 DATE, 7 ICCAD, 31 ASP-DAC, 8 FPGA) in the areas of *EDA*, *FPGA*, *VLSI Design*, and *Embedded Systems*, with a focus on brain inspired computing, application specific heterogeneous computing, parallel circuit analysis, and power and reliability aware system design methodology. He has graduated 7 Ph.D. students and 17 Master Students, and currently advising 10 doctoral students and 4 master Students. He has served as PI/Co-PI on over 30 research grants administrated by China government agencies (including NSFC, National Key Technology Program, 863, etc.) and 20 research grants from industry (including Microsoft, IBM, etc.), with total amount of over 50 million RMB and personal share of over 30 million RMB. These projects lead to new CAD tools and optimization methods, interesting heterogeneous computing systems based on CPU/FPGA/GPU/emerging memory technology. He has received Best Paper Award in ASP-DAC19, FPGA17, NVMSA17, ISVLSI12, Best Poster Award in HEART12, and 9 Best Paper Nominations (DATE18, DAC17, ASP-DAC16, ASP-DAC14, ASP-DAC12, 2 in ASP-DAC10, ISLPED09, CODES09). He is a recipient of Under-40 Innovators Award at DAC in 2018 (only 5 all over the world/year), High-end Leadership Award of Zhongguancun Talent Program in 2018, IBM X10 Faculty Award in 2010 (one of 30 worldwide). He also received Natural Science Fund for Outstanding Youth Fund in 2016. He is the co-founder of Deephi Tech (a leading deep learning solution provider), which is acquired by Xilinx (about 300M USD) in 2018.

## Service Summary

Yu Wang has been an active volunteer in the design automation, VLSI, and FPGA conferences. He served as TPC chair for ISVLSI 2018, Program Co-Chair for ICFPT 2019/2011 and Finance Chair of ISLPED 2012-2016, Track Chair for DATE 2017-2019 and GLSVLSI 2018, program committee member for leading conferences in these areas, including top EDA conferences such as DAC, DATE, ICCAD, ASP-DAC, and top FPGA conferences such as FPGA and FPT, and served as member of 3 specialized committee (Computer Architecture, Computer Engineering Process, and Fault-tolerance) of CCF. Currently he serves as Co-Editor-in-Chief for ACM SIGDA E-News, Associate Editor for IET Computers and Digital Techniques, IEEE Embedded System Letter, IEEE Transactions on CAD, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT), and Journal of Circuits, Systems, and Computers, and Special Issue Editor for Microelectronics Journal. He also serves as guest editor for Integration, the VLSI Journal and IEEE Transactions on Multi-Scale Computing Systems. He has given over 70 invited talks and 4 tutorials in industry/academia. He is with ACM distinguish speaker program and an ACM/IEEE Senior Member.

## Awards and Honors

- 2019 **Qingzhu Award**, China Computer Federation (CCF).
- 2019 **Alexander von Humboldt Fellowship**, Alexander von Humboldt Foundation.
- 2019 **Best Paper Award**, Asia and South Pacific Design Automation Conference (ASP-DAC). (Paper [C8])
- 2018 **Under-40 Innovators Award**, Design Automation Conference (DAC) 2018
- 2018 **Champion**, System Design Contest on Low Power Object Detection (FPGA Group) at Design Automation Conference (DAC) 2018.
- 2018 **High-end Leadership Award**, Zhongguancun Talent Program
- 2018 **Best Paper Candidate**, Design, Automation & Test in Europe Conference & Exhibition (DATE). (Paper [C20])
- 2017 **First Prize of Technological Invention**, CCF Awards of Science and Technology
- 2017 **Best Paper Award**, International Symposium on Field-Programmable Gate Arrays (FPGA). (Paper [C27])
- 2017 **Best Paper Award**, Non-Volatile Memory Systems and Applications Symposium (NVMSA). (Paper [C28])
- 2017 **Best Paper Candidate**, Design Automation Conference (DAC). (Paper [C37])
- 2016 **Best Paper Candidate**, Asia and South Pacific Design Automation Conference (ASP-DAC). (Paper [C46])
- 2016 **Distinguished Speaker**, Association for Computing Machinery (ACM).
- 2016 **Outstanding Youth Fund**, Natural Science Fund of China.
- 2015 **Champion**, Low Power Image Recognition Challenge (LPIRC) at Design Automation Conference (DAC) 2015.
- 2014 **Best Paper Candidate**, Asia and South Pacific Design Automation Conference (ASP-DAC). (Paper [C91])
- 2012 **Best Paper Award**, IEEE Computer Society Annual Symposium on VLSI (ISVLSI). (Paper [C108])
- 2012 **Best Poster Award**, International Symposium on Highly Efficient Accelerators and Reconfigurable Technologies (HEART).
- 2012 **Best Paper Candidate**, Asia and South Pacific Design Automation Conference (ASP-DAC).(Paper [C118])
- 2011 **Exchange Award**, Research Exchanges with China and India, Royal Academy of Engineering, UK.
- 2010 **IBM X10 Innovation Faculty Award**
- 2010 **Excellent Student Research Training (SRT) Program Instructor**, Tsinghua University.
- 2010 **Second Prize** of AMD GPU Competition, China.
- 2010 **Best Paper Candidates x 2**, Asia and South Pacific Design Automation Conference(ASP-DAC).(Paper [C143][C145])
- 2009 **Best Paper Candidate**, International Symposium on Low Power Electronics and Design(ISLPED) (Paper [C149])
- 2009 **Best Paper Candidate**, IEEE/ACM International Conference on Hardware/Software-Coesign and System Synthesis (CODES+ISSS)(Paper [C162])
- 2009 **First Prize** of AMD GPU Competition, China.
- 2009 **Excellent Student Research Training (SRT) Program Instructor**, Tsinghua University.
- 2007 **Excellent PhD Dissertation**, Tsinghua University.

## Selected Student Awards

2019	<b>Guohao Dai</b> , Excellent Doctoral thesis award of Tsinghua University
2019	<b>Guohao Dai</b> , Excellent graduate of Beijing
2019	<b>Guohao Dai</b> , Excellent graduate of Tsinghua University
2018	<b>Lixue Xia</b> , Excellent Doctoral thesis award of Tsinghua University
2018	<b>Lixue Xia</b> , Excellent graduate of Beijing
2018	<b>Lixue Xia</b> , Excellent graduate of Tsinghua University
2017	<b>Lixue Xia</b> , National Scholarship, awarded by MOE of China
2017	<b>Tianqi Tang</b> , Excellent Master thesis award of Tsinghua University
2016	<b>Tianqi Tang</b> , National Scholarship, awarded by MOE of China
2016	<b>Boxun Li</b> , Excellent graduate of Beijing
2016	<b>Boxun Li</b> , Excellent Master thesis award of Tsinghua University
2015	<b>Boxun Li</b> , National Scholarship, awarded by MOE of China
2015	<b>Boxun Li</b> , Excellent Research Award @ Student Research Forum ASP-DAC 2015
2015	<b>Wenqiang Wang</b> , Excellent graduate of Beijing
2015	<b>Wenqiang Wang</b> , Excellent Master thesis award of Tsinghua University
2015	<b>Xiaoming Chen</b> , European Design and Automation Association (EDAA) Outstanding Dissertations Award
2014	<b>Wulong Liu</b> , National Scholarship, awarded by MOE of China
2014	<b>Xiaoming Chen</b> , Excellent graduate of Beijing
2014	<b>Xiaoming Chen</b> , Excellent PhD thesis award of Tsinghua University
2013	<b>Song Yao</b> , Gold Medal in ACM Student Research Competition @ ICCAD
2013	<b>Xiaoming Chen</b> , National Scholarship, awarded by MOE of China
2012	<b>Xiaoming Chen</b> , Young Scholarship Award for Distinguished Doctoral Candidates, awarded by MOE of China
2012	<b>Yi Shan</b> , IBM PhD Fellowship Award, among 84 around the world
2007-now	8 students won the Excellent Undergraduate Thesis Award of Tsinghua University

## Teaching

2018 - now	Course director of <i>Fundamental of Digital Logic and Processor</i> , Undergraduate Students
2016 - now	<i>Fundamental of Digital Logic and Processor</i> , Undergraduate Students
2014 - now	<i>Modern Computer Architecture</i> , Undergraduate Students
2009 - now	<i>Computer Aided Design for Digital Integrated Circuits</i> , Postgraduate Students
2009 - now	<i>C/UNIX Programming</i> , Postgraduate Students

## Selected National Projects

*Note: Personal Share is listed at the end of each item.*

2020.01- 2023.12	<b>Natural Science Foundation of China:</b> <i>Research on Large-scale Multi-source and Heterogeneous Architecture for Intelligence Applications.</i> PI: Yu Wang, Zidong Du, Jun Yang <i>RMB 2,630,000</i>
2019.01- 2023.12	<b>Natural Science Foundation of China:</b> <i>Mechanism and Architecture for Memristor-based Combination of Computing and Memory.</i> PI: Dan Feng, Yu Wang, Liang Fang, <i>RMB 3,000,000</i>
2018.07- 2021.06	<b>Minster of Education, China:</b> <i>Real-time collaborative intelligence of mobile networks.</i> PI: Yuan Shen, Yu Wang, <i>RMB 1,500,000</i>
2018.05- 2021.04	<b>The National Key Research and Development Program of China:</b> <i>Environmental Perception Technology of Automatic Driving Electric Vehicle.</i> PI: Yu Wang, <i>RMB 1,407,000</i>
2018.03- 2019.02	<b>Advanced Scientific and Technological Innovation Project :</b> <i>Key technology of Intelligent Computing for Video Analysis</i> PI: Yu Wang, <i>RMB 2,780,000</i>
2017.07- 2022.06	<b>The National Key Research and Development Program of China:</b> <i>Multi-port Non-volatile Nano Logic Devices and Expansion of Computing Capability.</i> PI: Yuchao Yang, Yu Wang, Bing Chen, <i>RMB 930,000</i>
2017.01- 2019.12	<b>Natural Science Foundation of China:</b> <i>Design Methodology of Energy Efficient Circuit and System.</i> PI: Yu Wang, <i>RMB 1,300,000</i>
2017.01- 2018.12	<b>Minster of Education, China:</b> <i>Memristor-based Neuromorphic Computing.</i> PI: Yu Wang, <i>RMB 1,000,000</i>

- 2016.02-  
2019.01 **Natural Science Foundation of China:** *Theories and Methods of Hardware Security.*  
PI: Huazhong Yang, Yu Wang, RMB 1,210,000
- 2015.01-  
2018.12 **973 Project:** *Basic research on the theory and method of trustworthiness evaluation.*  
PI: Huazhong Yang, RMB 1,400,000
- 2014.10-  
2016.06 **Minster of Education, China:** *Research on Brain Inspired Computing Systems.*  
PI: Luping Shi, Yu Wang, RMB 500,000.
- 2014.01-  
2017.12 **Natural Science Foundation of China:** *Research on Power Efficient Heterogeneous Hardware Computing System for Video Data Analytics.*  
PI: Yu Wang, RMB 770,000.
- 2014.01-  
2016.12 **Minster of Education, China:** *Key technologies in Brain Like Neuron Computing Systems.*  
PI: Weibei Dou, Yu Wang, RMB 300,000.
- 2014.01-  
2016.12 **Minster of Education, China:** *Research on high level synthesis optimization algorithm for dynamic reconfigurable SOC*  
PI: Yuchun Ma, Yu Wang RMB 100,000
- 2013.06-  
2014.12 **National Key Technology Program:** *Research on LTE-Advanced Soft-Baseband Processing System.*  
PI: Yu Wang, RMB 397,500
- 2013.01-  
2016.12 **Natural Science Foundation of China:** *Cross-layer Analysis and Optimization for the Lifetime Reliability of MPSoCs.*  
PI: Huazhong Yang, Qiang Xu, Yu Wang, RMB 450,000
- 2013.01-  
2014.12 **973 Project :** *Research on the theory of intelligent cooperative fast band wireless network*  
PI: Jianhua Lu, Xiaoming Tao, Yu Wang RMB 400,000
- 2013.01-  
2014.12 **Key Project of Pre Research Fund :** *High energy and complex environment Analysis*  
PI: Huiming Ma, Yu Wang RMB 300,000
- 2011.07-  
2013.06 **Pre-research Fund:** *Key technology for many-core systems*  
PI: Yu Wang, RMB 300,000
- 2011.01-  
2013.12 **National Key Technology Program:** *Research on Generic Technology for New IMT-Advanced Baseband Processing System.*  
PI: Yu Wang, RMB 800,000
- 2011.01-  
2013.12 **National Key Technology Program:** *Development and Application of EDA tools.* PI: Yu Wang, RMB 456,000
- 2011.01-  
2013.12 **Natural Science Foundation of China:** *Research on Physical Planning for Heterogeneous Multi-core Microarchitecture*  
PI: Yuchun Ma, Yu Wang RMB 100,000
- 2011.01-  
2013.12 **Independent Scientific Research Cross Fund :** *Research Fund for Water Quality Monitoring Technology of Water Supply Network Based on Internet of Things*  
PI: Shumin Liu, Yu Wang RMB 250,000
- 2011.01-  
2012.12 **Natural Science Foundation of China:** *Research on Circuits and Architecture for 3D MPSoC.*  
PI: Yuan Xie, Huazhong Yang, Yu Wang, RMB 150,000
- 2010.07-  
2012.12 **Minster of Education, China:** *Research on key design technology of Green 3D-chip*  
PI: Qiang Zhou, Yu Wang RMB 100,000
- 2010.05-  
2011.05 **Space Innovation Fund :** *Research on Hybrid Storage*  
PI: Huazhong Yang, Yu Wang RMB 30,000
- 2010.01-  
2011.12 **National Key Technology Program:** *Research on Key Technologies of High Performance Embedded CPU-Research on Clock Tree Technology.*  
PI: Huazhong Yang, Yu Wang RMB 900,000
- 2009.01-  
2011.12 **Natural Science Foundation of China:** *Research on FPGA based Anti-Degradation Machine Learning.*  
PI: Yu Wang, RMB 290,000
- 2009.01-  
2010.12 **National 863 program:** *Low power Heterogeneous MPSoC based on Sensor Network on Chip.*  
PI: Yongpan Liu, Yu Wang, RMB 190,000
- 2008.10-  
2010.12 **National Key Technology Program:** *Advanced EDA platform development.*  
PIs: Huazhong Yang, Yu Wang, RMB 2,600,000

- 2008.01-2010.01 **Minster of Education, China** : *High performance/High reliability/Low power incremental layout method for SOC design*  
PI: Yuchun Ma, RMB 100,000
- 2008.01-2010.01 **The Li Chuanxin fund of the Electronic Department**: *Self-detecting high reliability multi-core SOC*  
PI: Yu Wang, RMB 30,000

## Industry Projects

*Note: Personal Share is listed at the end of each item.*

- 2019.10-2020.10 **Huawei**: *Graph Accelerators.*  
PI: Yu Wang, RMB 465,000
- 2019.09-2020.08 **Meituan-Dianping Group**: *Visual Localization on Edge Computing.*  
PI: Yu Wang RMB 980,000
- 2019.07-2022.06 **Independent Research Program of Electronic Engineering Department of Tsinghua University**:  
*Design Method of Low Latency Multi Vehicle Cooperative Control.*  
PI: Yu Wang, Shengbo Li RMB 1,500,000
- 2018.07-2021.06 **Independent Research Program of Electronic Engineering Department of Tsinghua University**:  
*Real-time Collaborative Intelligence in Mobile Networks.*  
PI: Yu Wang, Shengbo Li RMB 3,000,000
- 2018.04-2019.03 **Toyota**: *Neural Network Security for Autopilot.*  
PI: Yu Wang, RMB 1,030,000
- 2018.01-2021.05 **DeePhi Tech**: *Processor Architecture for Sparse Deep Neural Network.*  
PI: Yu Wang, RMB 6,000,000
- 2018.01-2018.12 **CEPREI**: *Research on Integrated Circuit Security Monitoring Method Based on On-chip Sensing.*  
PI: Yu Wang, RMB 240,000
- 2017.04-2022.04 **DeePhi Tech**: *Parallel Computing Hardware Architecture Based on MapReduce.*  
PI: Yu Wang, RMB 1,000,000
- 2016.08-2017.05 **Huawei**: *BWT-based Hardware Compression Algorithm.*  
PI: Yu Wang, RMB 550,000
- 2016.03-2017.03 **Microsoft**: *A-Eye - Cloud + Terminal for Object Detection.*  
PI: Yu Wang, RMB 100,000
- 2016.01-2018.01 **Huawei**: *Multi-platform Implementaion of General Object Detection.*  
PI: Yu Wang, RMB 1,800,000
- 2015.09-2017.09 **Huawei**: *Design Exploration on Database Processor.*  
PI: Yu Wang, RMB 390,000
- 2015.09-2016.09 **Huawei**: *Research on Algorithms for Low Power Smart Hardware.*  
PI: Yu Wang, RMB 640,000
- 2015.02-2016.02 **Microsoft**: *A-Eye — a smart camera with real-time CNN.*  
PI: Yu Wang, RMB 100,000
- 2014.12-2015.12 **Unisound**: *Research on Multi-GPU training for DNN systems.*  
PI: Yu Wang, RMB 400,000
- 2014.09-2015.08 **Huawei**: *iFEP big data database basic operation acceleration.*  
PI: Yu Wang, RMB 600,000
- 2014.03-2016.03 **Huawei**: *Research on Hardware Acceleration for Database and Cloud System.*  
PIs: Yu Wang, RMB 400,000
- 2013.04-2014.04 **Microsoft**: *Heterogeneous Hardware Computing for Deep Neural Network.*  
PI: Yu Wang, RMB 140,000
- 2010.01-2012.05 **Mitsubishi Heavy Industries (MHI)**: *Development of a real-time image processing hardware prototype system.*  
PI: Yu Wang, RMB 900,000
- 2011.12-2013.12 **IBM**: *Smart IOT Database Appliance on Hybrid System.*  
PI: Yu Wang, RMB 100,000

- 2010.09-2011.08 **IBM:** *Low-Latency/High-Efficiency Programming Model for Pub/Sub Application on a Heterogeneous Multi-core Platform*. PI: Yu Wang, RMB 100,000
- 2010.04-2011.04 **Microsoft:** *Heterogeneous Hardware Computing for Brain Network Research on Alzheimer Disease*. PI: Yu Wang, RMB 200,000
- 2009.04-2010.04 **AMD:** *GPU-based Acceleration for Machine Learning Algorithms*. PI: Yu Wang, RMB 110,000
- 2008.04-2009.04 **Microsoft:** *General FPGA-based Acceleration for Machine Learning*. PI: Yu Wang, RMB 80,000

## Journal Publications

- [J1] Ming Cheng, Lixue Xia, Zhenhua Zhu, Yi Cai, Yuan Xie, **Yu Wang**, Huazhong Yang, “TIME: A Training-in-memory Architecture for RRAM-based Deep Neural Networks”, to appear in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2019.
- [J2] Guohao Dai, Tianhao Huang, Yuze Chi, Jishen Zhao, Guangyu Sun, Yongpan Liu, **Yu Wang**, Yuan Xie, Huazhong Yang, “GraphH: A Processing-in-Memory Architecture for Large-scale Graph Processing”, to appear in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, vol.38, No.4, 2019, pp.640-653.
- [J3] Lixue Xia, Mengyun Liu, Xuefei Ning, Krishnendu Chakrabarty, **Yu Wang**, “Fault-Tolerant Training Enabled by On-Line Fault Detection for RRAM-Based Neural Computing System”, to appear in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2019.
- [J4] Yi Cai, Tianqi Tang, Lixue Xia, Boxun Li, **Yu Wang**, Huazhong Yang, “Low Bit-width Convolutional Neural Network on RRAM”, to appear in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2019.
- [J5] Yu Xing, Shuang Liang, Lingzhi Sui, Xijie Jia, Jiantao Qiu, Xin Liu, Yushun Wang, **Yu Wang**, Yi Shan, “DNNVM : End-to-End Compiler Leveraging Heterogeneous Optimizations on FPGA-based CNN Accelerators”, to appear in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2019.
- [J6] Kaiyuan Guo, Shulin Zeng, Jincheng Yu, **Yu Wang**, and Huazhong Yang, “A Survey of FPGA-Based Neural Network Inference Accelerator”, in *ACM Transactions on Reconfigurable Technology and Systems (TRETS)*, vol.12, No.1, 2019.
- [J7] Liying Xu, Rui Yuan, Zhenhua Zhu, Keqin Liu, Zhaokun Jing, Yimao Cai, **Yu Wang**, Yuchao Yang, Ru Huang, “Memristor-Based Efficient In-Memory Logic for Cryptologic and Arithmetic Applications”, in *Advanced Materials Technologies*, vol.4, No.7, 2019, pp.1900212.
- [J8] Guohao Dai, Tianhao Huang, **Yu Wang**, Huazhong Yang, John Wawrzynek, “HyVE: Hybrid Vertex-Edge Memory Hierarchy for Energy-Efficient Graph Processing”, in *IEEE Transactions on Computers (ToC)*, vol.68, No.8, 2019, pp.1131-1146.
- [J9] Jincheng Yu, Guangjun Ge, Yiming Hu, Xuefei Ning, Jiantao Qiu, Kaiyuan Guo, **Yu Wang**, and Huazhong Yang, “Instruction Driven Cross-layer CNN Accelerator For Fast Detection on FPGA”, to appear in *ACM Transactions on Reconfigurable Technology and Systems (TRETS)*, vol.11(3), No.22, 2018.
- [J10] Yuliang Sun, **Yu Wang**, Huazhong Yang, “Bidirectional Database Storage and SQL Query Exploiting RRAM-based Process-in-Memory Structure”, to appear in *ACM Transactions on Storage (TOS)*, 2018.
- [J11] Haixiao Du, Mingrui Xia, Kang Zhao, Xuhong Liao, Huazhong Yang, **Yu Wang**, Yong He, “PAGANI Toolkit: Parallel graph-theoretical analysis package for brain network big data”, to appear in *Human brain mapping*, vol.1, No.17, 2018.
- [J12] Philip H. W. Leong, Hideharu Amano, Jason Anderson, Koen Bertels, Joo M. P. Cardoso, Oliver Diessel, Guy Gogniat, Mike Hutton, Junkyu Lee, Wayne Luk, Patrick Lysaght, Marco Platzner, Viktor K. Prasanna, Tero Rissa, Cristina Silvano, Hayden Kwok-Hay So, **Yu Wang**, “The First 25 Years of the FPL Conference: Significant Papers”, in *ACM Transactions on Reconfigurable Technology and Systems (TRETS)*, vol.10, No.2, 2017.
- [J13] Albert Lee, Chieh-Pu Lo, Chien-Chen Lin, Wei-Hao Chen, Kuo-Hsiang Hsu, Zhibo Wang, Fang Su, Zhe Yuan, Qi Wei, Ya-Chin King, Chrong-Jung Lin, Hochul Lee, Pedram Khalili Amiri, Kang-Lung Wang, **Yu Wang**, Huazhong Yang, Yongpan Liu, Meng-Fan Chang, “A ReRAM-Based Nonvolatile Flip-Flop With Self-Write-Termination Scheme for Frequent-OFF Fast-Wake-Up Nonvolatile Processors”, in *IEEE Journal of Solid-State Circuits*, vol.52, No.8, 2017.
- [J14] Lixue Xia, Wenqin Huangfu, Tianqi Tang, Xiling Yin, Krishnendu Chakrabarty, Yuan Xie, **Yu Wang**, Huazhong Yang, “Stuck-at Fault Tolerance in RRAM Computing Systems”, to appear in *IEEE Journal on Emerging and Selected Topics in Circuits and Systems (JETCAS)*, 2018.

- [J15] Ming Cheng, Lixue Xia, Zhenhua Zhu, Yi Cai, Yuan Xie, **Yu Wang**, Huazhong Yang, “TIME: A Training-in-memory Architecture for RRAM-based Deep Neural Networks”, to appear in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 2018.
- [J16] Lixue Xia, Mengyun Liu, Xuefei Ning, Krishnendu Chakrabarty, **Yu Wang**, “Fault-Tolerant Training Enabled by On-Line Fault Detection for RRAM-Based Neural Computing System”, to appear in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2018.
- [J17] Guohao Dai, Tianhao Huang, Yuze Chi, Jishen Zhao, Guangyu Sun, Yongpan Liu, **Yu Wang**, Yuan Xie, Huazhong Yang, “GraphH: A Processing-in-Memory Architecture for Large-scale Graph Processing”, to appear in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, 2018
- [J18] Yuliang Sun, Lanjun Wang, Chen Wang, **Yu Wang**, “Exploiting Stable Data Dependency in Stream Processing Acceleration on FPGAs”, in *ACM Transactions on Embedded Computing Systems (TECS)*, 2017.
- [J19] Kaiyuan Guo, Song Han, Song Yao, **Yu Wang**, Yuan Xie, Huazhong Yang, “SoftwareCHardware Codesign for Efficient Neural Network Acceleration”, in *IEEE Micro*, vol.37, No.2, 2017, pp.18-25..
- [J20] Xiaoming Chen, Lin Wang, **Yu Wang**, Yongpan Liu, Huazhong Yang, “A General Framework for Hardware Trojan Detection in Digital Circuits by Statistical Learning Algorithms”, in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, vol.36, No.10, 2017, pp.1633-1646.
- [J21] Kaiyuan Guo, Lingzhi Sui, Jiantao Qiu, Jincheng Yu, Junbin Wang, Song Yao, Song Han, **Yu Wang**, Huazhong Yang, “Angel-Eye: A Complete Design Flow for Mapping CNN onto Embedded FPGA, in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, vol.37, No.1, 2018, pp.35-47.
- [J22] Lixue Xia, Boxun Li, Tianqi Tang, Peng Gu, Pai-yu Chen, Shimeng Yu, Yu Cao, **Yu Wang**, Yuan Xie, Huazhong Yang, “MNSIM: Simulation Platform for Memristor-based Neuromorphic Computing System”, in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2017.
- [J23] Xiaoming Chen, Qiaoyi Liu, Song Yao, Jia Wang, Qiang Xu, **Yu Wang**, Yongpan Liu, Huazhong Yang, “Hardware Trojan Detection in Third-Party Digital Intellectual Property Cores by Multi-Level Feature Analysis”, in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2017.
- [J24] Miao Hu, Yiran Chen, J. Joshua Yang, **Yu Wang**, Hai Helen Li, “A Compact Memristor-Based Dynamic Synapse for Spiking Neural Networks”, in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems*, vol.36, No.8, 2017.
- [J25] Yinan Sun, Zhe Yuan, Yongpan Liu, Xueqing Li, Yiqun Wang, Qi Wei, **Yu Wang**, Vijaykrishnan Narayanan, Huazhong Yang, “Maximum Energy Efficiency Tracking Circuits for Converter-Less Energy Harvesting Sensor Nodes”, in *IEEE Transactions on Circuits and Systems II (IEEE TCAS-II)*, vol.64, No.6, 2017.
- [J26] Yuzhi Wang, Anqi Yang, Xiaoming Chen, Pengjun Wang, **Yu Wang**, Huazhong Yang, “A Deep Learning Approach for Blind Drift Calibration of Sensor Networks”, in *IEEE Sensors Journal*, vol.17, No.13, 2017, pp.4158 - 4171.
- [J27] Xiaoming Chen, Lin Wang, Boxun Li, **Yu Wang**, Xin Li, Yongpan Liu, Huazhong Yang, “Modeling Random Telegraph Noise as a Randomness Source and Its Application in True Random Number Generation”, in *IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)*, 2016.
- [J28] Xiaoxiao Liu, Mengjie Mao, Beiye Liu, Boxun Li, **Yu Wang**, Hao Jiang, Mark Barnell, Qing Wu, Jianhua Yang, Hai Li, and Yiran Chen, “Harmonica: A Framework of Heterogeneous Computing Systems With Memristor-Based Neuromorphic Computing Accelerators”, in *IEEE TRANSACTIONS ON CIRCUITS AND SYSTEMS-I: REGULAR PAPERS (IEEE TCAS-I)*, 2016.
- [J29] Xiaoming Chen, Boxun Li, **Yu Wang**, Yongpan Liu, Huazhong Yang, “A United Methodology for Designing Hardware Random Number Generators Based on Any Probability Distribution”, in *IEEE Transactions on Circuits and Systems II (IEEE TCAS-II)*, 2016.
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- [C169] **Yu Wang**, Hong Luo, Ku He, Rong Luo, Huazhong Yang, Yuan Xie, “Temperature-aware NBTI modeling and the impact of input vector control on performance degradation”, in *Proceedings of the Design, Automation & Test in Europe Conference & Exhibition (DATE)*, 2007, pp.1-6.
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- [C173] **Yu Wang**, Hai Lin, Huazhong Yang, Rong Luo, Hui Wang, “Simultaneous fine-grain sleep transistor placement and sizing for leakage optimization”, in *Proceedings of the 7th International Symposium on Quality Electronic Design (ISQED)*, 2006, pp.723-728.

## Student Supervision

*Note: I started to co-advise Ph.D. and Master Students since 2007, I could have my own Master Students from 2009, Ph.D students from 2013.*

### Doctoral Dissertations Supervised

- [1]. 2019 **Guohao Dai**, Ph.D. in Electronic Engineering, Tsinghua University  
*Key Technologies of Fast and Energy-efficient Large-scale Graph Processing Architectures*  
First Job: Postdoctoral Researcher at Tsinghua University
- [2]. 2019 **Yuliang Sun**, Ph.D. in Electronic Engineering, Tsinghua University  
*Key Technologies of Heterogeneous Data Processing System for Edge Computing*  
First Job: Alibaba Group
- [3]. 2018 **Lixue Xia**, Ph.D. in Electronic Engineering, Tsinghua University  
*Research on Key Technologies of RRAM-based High Energy Efficient Neural Network Computing System*  
First Job: Alibaba Group
- [4]. 2017 **Haixiao Du**, Ph.D. in Electronic Engineering, Tsinghua University (Co-adviced with Prof. Huazhong Yang)  
*Research on the Parallel Computing and Test-Retest Reliability of High-Resolution Functional Connectomics*  
First Job: CITIC Technology Development Co., Ltd.
- [5]. 2015 **Wulong Liu**, Ph.D. in Electronic Engineering, Tsinghua University (Co-adviced with Prof. Huazhong Yang)  
*Key Technologies of Three-dimensional Integrated Mixed-signal Systems*  
First Job: Cognitive Computing, Huawei Research Lab.
- [6]. 2014 **Yi Shan**, Ph.D. in Electronic Engineering, Tsinghua University (Co-adviced with Prof. Xu Chen)  
*Key Technologies of Big Data Application-Specific Custom Computing*  
First Job: Deep Learning Lab (IDL), Baidu
- [7]. 2014 **Xiaoming Chen**, Ph.D. in Electronic Engineering, Tsinghua University (Co-adviced with Prof. Huazhong Yang)  
*Algorithm Parallelization and Architecture Optimization for Irregular Problems*  
First Job: Postdoc in CMU.

### Master Thesis Supervised

- 2019 **Yu Xing**, M.S. in Electronic Engineering, Tsinghua University  
*A Domain-specific Compiler Framework For DPU*  
First job: Xilinx
- 2019 **Yiming Hu**, M.S. in Electronic Engineering, Tsinghua University  
*Deep Learning Algorithm Optimization and Hardware-software codesign for Small Object Detection*  
First job: Xilinx
- 2018 **Ming Cheng**, M.S. in Electronic Engineering, Tsinghua University  
*TIME: A Training-in-memory Architecture for RRAM-based Deep Neural Network*  
First job: Infrastructure, Alibaba Group
- 2018 **Baofu Zhao**, M.S. in Electronic Engineering, Tsinghua University  
*Research on BWT-based Lossless Compression System and FPGA Implementation*  
First job: Baidu
- 2017 **Kang Zhao**, M.S. in Electronic Engineering, Tsinghua University  
*Algorithmic Research on High-Resolution Functional Brain Network Construction from rs-fMRI*  
First job: Ph.D. student in Tsinghua University
- 2017 **Tianqi Tang**, M.S. in Electronic Engineering, Tsinghua University  
*Low Bit-Level Neural Network on ReRAM*  
First job: Ph.D. student in University of California, Santa Barbara

- 2017 **Mengyuan Gu**, M.S. in Electronic Engineering, Tsinghua University  
*Design and Optimization of Stereo Vision Algorithm Based on FPGA*  
First job: China Orient Asset Management CO.,LTD.
- 2016 **Xijie Jia**, M.S. in Electronic Engineering, Tsinghua University  
*Research of Real-Time High Resolution SURF on FPGA*  
First job: Kunming Institute of Physics
- 2016 **Yubin Li**, M.S. in Electronic Engineering, Tsinghua University  
*Research of FPGA-based Acceleration for Basic Column-Database Operations*  
First job: DeePhi Tech
- 2016 **Boxun Li**, M.S. in Electronic Engineering, Tsinghua University  
*Research on RRAM-based Energy Efficient Computing*  
First job: Qihoo 360
- 2015 **Wenqiang Wang**, M.S. in Electronic Engineering, Tsinghua University  
*Research on FPGA-based Stereo Vision System*  
First job: Microsoft Research Asia
- 2015 **Lin li**, M.S. in Electronic Engineering, Tsinghua University  
*Research on Heterogeneous Network Protocol of Bridge Health Monitoring System Based on CAN*
- 2014 **Zilong Wang**, M.S. in Electronic Engineering, Tsinghua University  
*Time Series Data Mining on FPGA*  
First job: Netease
- 2013 **Shuai Tao**, M.S. in Electronic Engineering, Tsinghua University (Co-advised with Prof. Hui Wang)  
*Hierarchical P/G Simulation Method for 3D IC*  
First job: Renmin Search
- 2013 **Xin Li**, M.S. in Electronic Engineering, Tsinghua University  
*Low Power Clock Tree Synthesis for embedded CPU*  
First job: 28th Research Institute
- 2015 **Tao Liu**, M.S. in Electronic Engineering, Tsinghua University  
*Coding Hardware Accelerator Design of LTE Down Stream Physical Layer*
- 2009 **Yan Xu**, M.S. in Electronic Engineering, Tsinghua University (Co-advised with Prof. Huazhong Yang)  
*Power Gating Methodology in MPSOC considering P/G Noise*  
First job: MediaTek

#### Current Ph.D. Students

- [1]. Ph.D. **Kaiyuan Guo**, (2015- now) Ph.D. Student in Electronic Engineering, Tsinghua University
- [2]. Ph.D. **Jiantao Qiu**, (2015- now, Co-advised with Prof. Sen Song) Ph.D. Student in Electronic Engineering, Tsinghua University
- [3]. Ph.D. **Jincheng Yu**, (2016- now) Ph.D. Student in Electronic Engineering, Tsinghua University
- [4]. Ph.D. **Xuefei Ning**, (2016- now, female) Ph.D. Student in Electronic Engineering, Tsinghua University
- [5]. Ph.D. **Hanbo Sun**, (2017- now) Ph.D. Student in Electronic Engineering, Tsinghua University
- [6]. Ph.D. **Yi Cai**, (2017- now) Ph.D. Student in Electronic Engineering, Tsinghua University
- [7]. Ph.D. **Zhenhua Zhu**, (2018- now) Ph.D. Student in Electronic Engineering, Tsinghua University
- [8]. Ph.D. **Shulin Zeng**, (2018- now) Ph.D. Student in Electronic Engineering, Tsinghua University
- [9]. Ph.D. **Kai Zhong**, (2019- now) Ph.D. Student in Electronic Engineering, Tsinghua University
- [10]. Ph.D. **Chao Yu**, (2019- now) Ph.D. Student in Electronic Engineering, Tsinghua University

#### Current M.S. Students

- [1]. M.S. **Wenshuo Li**, (2017- now, Co-advised with Prof. Qi Wei) M.S Student in Electronic Engineering, Tsinghua University
- [2]. M.S. **Ranran Huang**, (2017- now, female) M.S Student in Electronic Engineering, Tsinghua University
- [3]. M.S. **Zhilin Xu**, (2018- now) M.S Student in Electronic Engineering, Tsinghua University
- [4]. M.S. **Weicong Chen**, (2018- now) M.S Student in Electronic Engineering, Tsinghua University

- [5]. M.S. **Jingbo Hu**, (2019- now) M.S Student in Electronic Engineering, Tsinghua University
- [6]. M.S. **Feng Gao**, (2019- now) M.S Student in Electronic Engineering, Tsinghua University

## Presentations

- 2019 Invited Talk, Workshop on Hardware and Algorithms for Learning On-a-chip (HALO) at ICCAD19 Westminster, US  
“Neural Network on Chip Design from the User Perspective”
- 2019 Invited Talk, Stanford University Department of Electrical Engineering Computer Systems Colloquium (EE380) Stanford, US  
“Neural Network on Chip Design from the User Perspective”
- 2019 Invited Talk, ASICON 2019 Chongqing, China  
“Neural Networks on Chip: From CMOS Accelerators to In-Memory-Computing”
- 2019 Invited Talk, MWSCAS 2019 Dallas, US  
“Neural Networks on Chip: From CMOS Accelerators to In-Memory-Computing”
- 2019 Invited Talk, Dagstuhl neuromorphic computing forum 2019 Dagstuhl, Germany  
“Emerging Hardware Techniques and EDA Methodologies for Neuromorphic Computing”
- 2019 Invited Talk, ASP-DAC 2019 Tokyo, Japan  
“Fault Tolerance in Neuromorphic Computing Systems”
- 2018 Invited Talk, Shanghai Academy of Spaceflight Technology Shanghai, China  
“Efficient Deep Learning Processing Unit Design for FPGA/Edge”
- 2018 Invited Talk, University of Shanghai for Science and Technology Shanghai, China  
“Efficient Deep Learning Processing Unit Design for FPGA/Edge”
- 2018 Invited Talk, Workshop at 32nd ACM International Conference on Supercomputing (ICS 2018) Beijing, China  
“Training on FPGA”
- 2018 Tutorial, 23rd IEEE European Test Symposium Bremen, Germany  
“Design of Fault-Tolerant Neuromorphic Computing Systems”
- 2018 Invited Talk, University of Toronto & Tsinghua University: Innovation Entrepreneurship Forum Toronto, Canada  
“Efficient Deep Learning Processing Unit Design for FPGA/Edge”
- 2018 Invited Talk, 2018 National Conference of Deep Learning Technology and Application Xiamen, China  
“The Status and Prospect of Deep Learning Processor”
- 2018 Invited Talk, Hefei 168 Middle School Hefei, China  
“The Path to the Development of Artificial Intelligence: from Algorithms to Chips”
- 2018 Invited Talk, Maanshan No.2 High School MaAnshan, China  
“The Path to the Development of Artificial Intelligence: from Algorithms to Chips”
- 2018 Tutorial, 2018 VLSI-DAT Taiwan  
“Software-Hardware Co-Design for Efficient Neural Network Acceleration”
- 2018 Invited Talk, 10th LSE SU China Development Forum London, UK  
“Neural Networks on RRAM Opportunity and Challenge”
- 2018 Invited Talk, Imperial College London London, UK  
“Efficient Deep Learning Processing Unit Design for FPGA/Edge”
- 2018 Invited Talk, NUCTECH Conference on Security Technology and Innovation Beijing, China  
“Deep Learning Processor: from the Edge to the Cloud ”
- 2018 Invited Talk, China Mobile Communication Corporation Beijing, China  
“AI Plus: Deep Learning Processor and Multi Scene AI Application”
- 2018 Invited Talk, 2018 Innovation Investment Summit Shenzhen, China  
“AI Plus: Deep Learning Processor and Multi Scene AI Application”
- 2018 Invited Talk, International Symposium on Computer Hardware and Artificial Intelligence Security 2018 Shenzhen, China  
“Neural Network Accelerator and Thinking of Security”
- 2018 Invited Talk, Alibaba San Jose, CA, US  
“Efficient Deep Learning Processing Unit Design for FPGA/Edge”
- 2018 Invited Talk, Xi’an Jiaotong University Xi’an, China

	“Efficient Deep Learning Processing Unit Design for FPGA/Edge”	
2018	Invited Talk, Xidian University “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Xi’an, China
2018	Invited Talk, Duke “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Durham, NC, US
2017	Invited Talk, Shanghai Jiao Tong University “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Shanghai, China
2017	Invited Talk, Inspur “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Shandong, China
2017	Invited Talk, Keysight Technologies “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Shanghai, China
2017	Invited Talk, Symposium on Bio-inspired Circuits 2017 “Neural Networks on RRAM Opportunity and Challenge”	Beijing, China
2017	Invited Talk, Department of Electronic Engineering Doctoral Students Forum, Tsinghua “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Beijing, China
2017	Invited Talk, Department of Automotive Engineering Doctoral Students Forum, Tsinghua “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Beijing, China
2017	Invited Talk, CNCC 2017 “Accelerator Design Technical Overview and Development Challenges”	Fuzhou, China
2017	Invited Talk, CCF High Performance Computing China 2017 “Design and Thinking of Neural Network Based on Resistive Memory”	Hefei, China
2017	Invited Talk, University of Science and Technology of China “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Hefei, China
2017	Invited Talk, 13th ESWEEK “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Seoul, South Korea
2017	Invited Talk, Institute of Computing Technology Chinese Academy of Sciences “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Beijing, China
2017	Invited Talk, China Electric Power Research Institute “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Beijing, China
2017	Invited Talk, CCF Computer Engineering and Techniques “Deep Learning on Edge”	Xiamen, China
2017	Invited Talk, Summer Course of Circuit and System Design Technology for Deep Learning “Deep Learning on Edge”	Taiwan
2017	Invited Talk, Tsinghua 2017 Summer School “Energy-Efficient Intelligent Computing”	Beijing, China
2017	Invited Talk, CFTC 2017 “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Nanjing, China
2017	Invited Talk, Huazhong University of Science and Technology “Efficient Deep Learning Processing Unit Design for FPGA/Edge”	Wuhan, China
2017	Invited Talk, Fudan University “Software-Hardware Co-Design for Efficient Neural Network Acceleration on FPGA”	Shanghai, China
2017	Invited Talk, ShanghaiTech Workshop on Emerging Devices, Circuits and Systems “Software-Hardware Co-Design for Efficient Neural Network Acceleration on FPGA”	Shanghai, China
2017	Invited Talk, THU-USC Faculty Research Symposium on The 4th Industrial Revolution: Enabling Tools and Methods “Software-Hardware Co-Design for Efficient Neural Network Acceleration on FPGA”	Beijing, China
2017	Invited Talk, Heterogeneous Computing in the AI Era: Tencent Rhinoceros Bird Salon “Software-Hardware Co-Design for Efficient Neural Network Acceleration on FPGA”	Shenzhen, China
2017	Invited Talk, 2017 China-Africa Youth Gala “Innovation in Tsinghua”	Pretoria, South Africa
2017	Invited Talk, National Tsing Hua University “Towards Efficient Deep Learning Processing on FPGA”	Taiwan

2017	Invited Talk, National Taiwan University "Towards Efficient Deep Learning Processing on FPGA"	Taiwan
2017	Invited Talk, Academic Symposium on High Performance Computing Technology to Promote Power System Evolution "Deep Learning on FPGA"	Beijing, China
2017	Invited Talk, CCF YOCSEF "Deep Learning on FPGA"	Beijing, China
2016	Invited Talk, Open Source Hardware Forum "From Model to FPGA: Software-Hardware Co-Design for Efficient Neural Network Acceleration"	Beijing, China
2016	Invited Talk, 2016 Chinese Electronic Information Deans Forum "Design and Industrialization thinking of Deep Learning Processor Based on FPGA"	Beijing, China
2016	Invited Talk, Huawei HIRP Exploratory 2016 "From Model to FPGA: Software-Hardware Co-Design for Efficient Neural Network Acceleration"	Shanghai, China
2016	Invited Talk, 12th ESWEEK "RRAM Based Learning Acceleration"	Pittsburgh, PA, USA
2016	Tutorial, FPL 16 "Energy-efficient Acceleration for Neuro-inspired Computing On-a-chip"	Lausanne, Switzerland
2016	Invited Talk, University of Notre Dame "Neural Network on RRAM"	Notre Dame, IN, US
2016	Invited Talk, OpenHW2016 "From Model to FPGA: Software-Hardware Co-Design for Efficient Neural Network Acceleration"	Shanghai, China
2016	Invited Talk, City University of Hong Kong "From Model to FPGA: Software-Hardware Co-Design for Efficient Neural Network Acceleration"	Hong Kong
2016	Invited Talk, CCF Computer Engineering and Techniques "Neural Network on RRAM"	Xi'an, China
2016	Invited Talk, Xilinx "Going Deeper with Embedded FPGA Platform for Convolutional Neural Network"	US
2016	Tutorial, ASP-DAC 16 "Machine Learning and Neuromorphic Computing Acceleration"	Macao
2016	Invited Talk, The Hong Kong Polytechnic University "Neural Network on RRAM"	Hong Kong
2015	Invited Talk, Huawei "Can CNN be implemented on Mobile Phone?"	Shenzhen, China
2015	Invited Talk, IBM OpenPower Forum: 2nd Generation Distributed Computing Forum "CNN on FPGA for Image-Net"	Beijing, China
2015	Invited Talk, Shanghai Tec University "Energy Efficient Neural Networks for Big Data Analytics"	Shanghai, China
2015	Invited Talk, GLSVLSI 15 "Energy Efficient RRAM Spiking Neural Network for Real Time Classification"	Pittsburgh, PA, USA
2015	Invited Talk, Shanghai Jiaotong University "Energy Efficient Neural Networks for Big Data Analytics"	Shanghai, China
2015	Invited Talk, University of Pitts "Energy Efficient Neural Networks for Big Data Analytics"	Pittsburgh, PA, USA
2015	Invited Talk, CMU "Hardware Acceleration for Data Analytics on FPGA"	Pittsburgh, PA, USA
2015	Invited Talk, UIUC "Energy Efficient Neural Networks for Big Data Analytics"	Urbana, IL, US
2015	Invited Talk, UCLA "Energy Efficient Neural Networks for Big Data Analytics"	LA, CA, US
2015	Invited Talk, Institute of Software, Chinese Academy of Science "A Heterogeneous Accelerator Platform for Multi-Subject Voxel-based Brain Network Analysis"	Beijing, China
2014	Invited Talk, Huawei	Shenzhen, China

	“Heterogeneous Hardware Computing for Big Data Analytics”	
2014	Invited Talk, Intel Research China “Energy Efficient Neural Networks for Big Data Analytics”	Beijing, China
2014	Invited Talk, UCSB “Energy Efficient Neural Networks for Big Data Analytics”	Santa Barbara, CA, US
2014	Invited Talk, Asia Sensor Workshop “Time Series Data Mining on FPGAs”	Taiwan
2013	Invited Talk, Cambridge, Computing Lab “Energy Efficient Computing System in NICS CAD”	London, UK
2013	Invited Talk, Imperial College “Streaming Similarity Search on FPGA based on Dynamic Time Warping”	London, UK
2012	Invited Talk, DSMC Workshop at ICCAD “Streaming Similarity Computing on FPGAs”	San Jose, CA, USA
2012	Invited Talk, Profit 2012 “A Heterogeneous Accelerator Platform for Multi-Subject Voxel-based Brain Network Analysis”	China
2012	Invited Talk, Imperial College “Voxel-based Brain Network Analysis based on hybrid computing platforms”	London, UK
2011	Invited talk, ICCAD11 “A Heterogeneous Accelerator Platform for Multi-Subject Voxel-based Brain Network Analysis”	San Jose, CA, USA
2011	Invited Talk, National Tsinghua University “Sparse Matrix/Graph Problems on Many Cores: LU Decomposition and Brain Network Analysis”	Taiwan
2010	Invited talk, ASQED’10 “Hardware Computing for Brain Network Analysis”	Penang, Malaysia
2010	Invited Talk, National University of Singapore “Recent MPSoC research work in Nano-Integrated Circuits and Systems (NICS) Tsinghua”	Singapore
2010	Invited Talk, Pennsylvania State University “Recent MPSoC research work in Nano-Integrated Circuits and Systems (NICS) Tsinghua”	University Park, PA, USA

## Service and Activities

### Professional Community

2020 - now	Chair, Department of Electronic Engineering of Tsinghua University
2020 - now	Dean, Institute for Electronics and Information Technology in Tianjin of Tsinghua University
2016 - now	Member, ACM SIGDA Technical Committee of Reconfigurable Computing
2014 - now	Committee Member, ACM SIGDA Northern China Chapter
2015 - now	Founding Member, IEEE CEDA Beijing Chapter
2014 - now	Senior Member, IEEE
2016 - now	Senior Member, ACM
2014 - now	Founding Member, Research Center of Brain Inspired Computing Systems in Tsinghua University

### Editorial Board

2020.01 - now	Associate Editor, IET Computers and Digital Techniques (CDT)
2020.01 - now	Associate Editor, IEEE Embedded System Letter
2017.01 - now	Co-Editor-in-Chief, ACM SIGDA E-News
2017.09 - now	Special Issue Editor, Microelectronics Journal
2018.01 - now	Associate Editor, IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
2013.12 - now	Associate Editor, IEEE Transactions on CAD (TCAD)
2013.05 - now	Associate Editor, Journal of Circuits, Systems, and Computers (JCSC)
2015	Guest Co-Editor, Integration, the VLSI Journal
2015	Guest Co-Editor, IEEE Transactions on Multi-Scale Computing Systems

### Services for Conferences

2018	Technical Program Committee Chair, IEEE Computer Society Annual Symposium on VLSI (ISVLSI)
2017 - now	Track Chair, Design Automation and Test in Europe (DATE)
2018	Track Chair, ACM Great Lakes Symposium on VLSI (GLSVLSI)



- 2012 - 2016 Finance Co-Chair, International Symposium on Low Power Electronics and Design (ISLPED)
- 2015 Selection Committee Member, Significant Papers from the First 25 Years of the FPL Conference
- 2011 Program Co-Chair, International Conference on Field Programmable Technology (ICFPT)
- 2011 Publicity Co-Chair, International Symposium on Low Power Electronics and Design (ISLPED)
- 2010 Demo Session Chair, Special Session Chair, International Conference on Field Programmable Technology (ICFPT)
- 2015 - 2017 Technical Program Committee Member, IFIP/IEEE International Conference on Very Large Scale Integration (VLSI-SoC)
- 2015 - 2016 Technical Program Committee Member, IEEE International Conference on Parallel and Distributed Systems (ICPADS)
- 2014 - 2016 Technical Program Committee Member, Design Automation Conference (DAC)
- 2014 - 2016 Technical Program Committee Member, ACM International Symposium on Field-Programmable Gate Arrays (FPGA)
- 2014 - 2016 Technical Program Committee Member, IEEE/ACM International Conference on Computer-Aided Design (ICCAD)
- 2014 - 2016 Technical Program Committee Member, Asia and South Pacific Design Automation Conference (ASP-DAC)
- 2014 Technical Program Committee Member, International Conference on VLSI Design (VLSI-D)
- 2014 - now Technical Program Committee Member, International Symposium on Highly Efficient Accelerators and Reconfigurable Technologies (HEART)
- 2012 - now Technical Program Committee Member, Design Automation and Test in Europe (DATE)
- 2010 - now Technical Program Committee Member, International Symposium on Low Power Electronics and Design (ISLPED)
- 2010 - 2012 Technical Program Committee Member, Asia and South Pacific Design Automation Conference (ASP-DAC)
- 2010 - now Technical Program Committee Member, International Conference on Field Programmable Technology (ICFPT)
- 2009 - 2013 Technical Program Committee Member, IEEE Computer Society Annual Symposium on VLSI (ISVLSI)
- 2009 - 2010 Technical Program Committee Member, Asia Symposium on Quality Electronic Design (ASQED)
- 2009 - 2010 Technical Program Committee Member, IEEE/ACM International Conference on Computer-Aided Design (ICCAD)
- 2008 - now Technical Program Committee Member, International Symposium on Quality Electronic Design (ISQED)

#### **External Reviewers**

- 2008- Reviewer of APCCAS, ISCAS, ISQED, GLSVLSI, DAC, VLSID08/09, ASP-DAC08/09, DATE09; IEEE Transactions on VLSI, Nature Electronics, International Journal of Electronics, IEEE Transactions on Parallel and Distributed Systems, IEEE Transactions on Computer-Aided Design, ACM Transactions on Embedded Computing Systems, and etc