Tinghuan CHEN

PH.D STUDENT

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Research Interest

- Machine Learning in Design for Reliability and Design Space Exploration in VLSI and Cyber-Physical Systems.
- Convolutional Neural Network Compression, Acceleration and Accelerator.

Education

Chinese University of Hong Kong (CUHK)   *Hong Kong, China*

PH.D STUDENT IN COMPUTER SCIENCE AND ENGINEERING   *2017 - PRESENT*

- Department of Computer Science and Engineering.

Southeast University (SEU)   *Nanjing, China*

MASTER OF ENGINEERING IN CIRCUITS & SYSTEMS   *2014 – 2017*

- National ASIC Engineering Technology Research Center.
- School of Electronics Science & Engineering.

Southeast University (SEU)   *Nanjing, China*

BACHELOR OF ENGINEERING IN ELECTRONICS SCIENCE & TECHNOLOGY   *2011 – 2014*

- School of Electronics Science & Engineering.

Southeast University (SEU)   *Nanjing, China*

MAJOR IN COMPUTER SCIENCE & TECHNOLOGY   *2010 – 2011*

- School of Computer Science & Engineering.

Publications

- **Tinghuan Chen**, Bingqing Lin, Hao Geng, Shiyan Hu, Bei Yu, "Leveraging Spatial Correlation for Sensor Drift Calibration in Smart Building", accepted by **IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)**.
- **Tinghuan Chen**, Qi Sun, Canhui Zhan, Changze Liu, Huatao Yu, Bei Yu, "Analog IC Aging-induced Degradation Estimation via Heterogeneous Graph Convolutional Networks", **IEEE/ACM Asian and South Pacific Design Automation Conference (ASPDAC)**, Tokyo, Jan. 18–21, 2021.
- Qi Sun, **Tinghuan Chen**, Siting Liu, Jin Miao, Jianli Chen, Hao Yu, Bei Yu, "Correlated Multi- objective Multi-fidelity Optimization for HLS Directives Design", **IEEE/ACM Proceedings Design, Automation and Test in Europe (DATE)**, Grenoble, Feb. 1–5, 2021.
- **Tinghuan Chen**, Bingqing Lin, Hao Geng, Bei Yu, "Smart Building Sensor Drift Calibration", **Big Data Analytics for Cyber-Physical Systems**, Springer, 2020: 187-202.
- Qi Sun, **Tinghuan Chen**, Jin Miao, Bei Yu, "Power-Driven DNN Dataflow Optimization on FPGA". **IEEE/ACM International Conference on Computer-Aided Design (ICCAD)**, Westminster, CO, Nov. 4–7, 2019. (Invited Paper)
- **Tinghuan Chen**, Bingqing Lin, Hao Geng and Bei Yu, "Sensor Drift Calibration via Spatial Correlation Model in Smart Building", **ACM/IEEE Design Automation Conference (DAC)**, Las Vegas, NV, June 2-6, 2019.
- Qianru Zhang, Meng Zhang, **Tinghuan Chen**, Zhifei Sun, Yuzhe Ma and Bei Yu, "Recent advances in convolutional neural network acceleration", **Neurocomputing**, vol. 323, pp. 37-51, 2019.
- Qianru Zhang, Meng Zhang, **Tinghuan Chen**, Jinan Fan, Zhou Yang and Guoqing Li, "Electricity Theft Detection Using Generative Models", **IEEE International Conference on Tools with Artificial Intelligence (ICTAI)**, Volos, Nov. 5-7, 2018.
- Zhifei Sun, **Tinghuan Chen**, You Tong and Meng Zhang, "Blind Equalization of Constant Modulus Signals Based on Gaussian Process for Classification", **Wireless Personal Communications**, vol. 97, no. 4, pp. 6005-6018, 2017.

- Chen Zhu, Huatao Zhao, **Tinghuan Chen** and Tianbo Zhu, "A low latency and high efficient three-dimension Network-on-Chip based on hierarchical structure", **Modern Physics Letters B**, vol. 31, no. 19-21, 1740061, 2017.
- **Tinghuan Chen**, Meng Zhang, Jianhui Wu, Chau Yuen and You Tong, "Image Encryption and Compression based on Kronecker Compressed Sensing and Elementary Automata Scrambling", **Optics & Laser Technology**, vol. 84, pp. 118-133, 2016.
- Meng Zhang, **Tinghuan Chen**, Xuchao Shi and Peng Cao, "Image Arbitrary Ratio Down- and Up-Sampling Scheme Exploiting DCT Low Frequency Components and Sparsity in High Frequency Components", **IEICE Transactions on Information and Systems**, vol. E99-D, no. 2, pp. 475-487, 2016.
- **Tinghuan Chen**, Zhifang Dong. "A New Method for the 3-D Discrete Hartley Transform", **IEEE International Conference on Instrumentation & Measurement, Computer, Communication and Control**, Harbin, Dec. 8-10, 2012.

Selected Patents

- Meng Zhang, Jingchuan Zhong, Hui Guo, **Tinghuan Chen**, Ziyang Chen, Jun Liu, "Reconfigurable modulation and demodulation method used in baseband processing", PCT/CN2016/073139.
- Meng Zhang, **Tinghuan Chen**, Zhifei Sun, "Down-sampling method, up-sampling method, and transmission processing method of video frames", PCT/CN2016/073415.

Honors & Awards

2017-2021	**Postgraduate Scholarship**,	*CUHK*
2016	**Postgraduate National Scholarship of China**,	*SEU*
2016	**Nan Rui Electric Scholarship**,	*SEU*
2014	**Master Student First Class Academic Scholarship**,	*SEU*
2014	**Southeast University Outstanding Thesis**, (6/187)	*SEU*
2013	**National Students Innovative Training Program**, Outstanding	*SEU*
2012	**National Endeavor Scholarship**,	*SEU*

Teaching

CENG3430 Rapid Prototyping of Digital Systems *CUHK*
Teaching Assistant *Spring 2020*

- Course Instructor: Ming-Chang YANG

CENG4480 Embedded System Development and Applications *CUHK*
Teaching Assistant *Fall 2019*

- Course Instructor: Bei YU

CENG3430 Rapid Prototyping of Digital Systems *CUHK*
Teaching Assistant *Spring 2019*

- Course Instructor: Ming-Chang YANG

CENG 3420 Computer Organization and Design *CUHK*
Teaching Assistant *Spring 2018*

- Course Instructor: Bei YU

Intern

Duke Kunshan University (DKU) *Kunshan, China*
Research Assistant *July. 2017 - Sep.2017*

- Instructor: Xin Li

Chinese University of Hong Kong (CUHK) *HK SAR*

Research Assistant *Mar. 2017 - May. 2017*

- Instructor: Bei Yu

Skills

Hardware	Verilog HDL, VHDL, High-level Synthesis, VHDL
Software	TensorFlow1.x, TensorFlow2.x, MATLAB, C++, Python, C, Tcl