

PROFESSIONAL EXPERIENCE	<b>Hong Kong University of Science and Technology (HKUST)</b> <b>Ph.D. Candidate</b> <i>Sep 2018 – present</i> <ul style="list-style-type: none"><li>• Advisor: Prof. Jiang Xu</li><li>• Explore future-generation architectures for high-performance multicore computing systems using optical networks</li><li>• Design, implement, and evaluate novel architectures, protocols through full-system simulation</li></ul> <b>JADE</b> <b>Core Maintainer</b> <i>Feb 2019 – present</i> <ul style="list-style-type: none"><li>• <a href="https://eexu.home.ece.ust.hk/JADE.html">https://eexu.home.ece.ust.hk/JADE.html</a></li><li>• Act as one of the core maintainers for the open-source project, JADE, a fast simulation and design exploration platform for heterogeneous multiprocessor system</li><li>• Implement and improve several key modules including arbitrators, cache hierarchy, novel optical power delivery systems, network-on-chip, and the build system of the project</li></ul> <b>COSMIC</b> <b>Core Maintainer</b> <i>Feb 2019 – present</i> <ul style="list-style-type: none"><li>• <a href="https://eexu.home.ece.ust.hk/COSMIC.html">https://eexu.home.ece.ust.hk/COSMIC.html</a></li><li>• Act as one of the core maintainers for the open-source project COSMIC, a realistic statistical multiprocessor benchmark suite</li><li>• Build and maintain 5 sets of mainstream benchmarks, listed as APEX, NAS, PARSEC, SPEC, and Splash</li></ul> <b>Academic Service</b> <b>Paper Reviewer</b> <i>Feb 2019 – present</i> <ul style="list-style-type: none"><li>• Served as an active reviewer of ASP-DAC, CODES+ISSS, ICPP, ISVLSI, MCSoc, DAC, NOCS, DATE, OFC, and PHOTONICS</li><li>• Served as an active reviewer of journal papers listed as, TC, TVLSI, TCAD, TPDS</li></ul>
EDUCATION	<b>Hong Kong University of Science and Technology</b> Ph.D. Candidate in Electronic and Computer Engineering Advisor: Prof. Jiang Xu CGA: 3.614/4.3 <i>Sep 2018 – present</i> <b>Hong Kong University of Science and Technology</b> Bachelor degree of Engineering, First Class Honor (The most honorable) <i>Sep 2014 – Sep 2018</i> <ul style="list-style-type: none"><li>• First major in Electronic and Computing Engineering</li><li>• Second major in Computer Science</li><li>• CGA: 3.82/4.3 (&lt;10% Graduate Students)</li></ul>
TECHNICAL SKILLS	<b>Programming</b> C/C++, Python, Bash, CMake, GNU make, Matlab, Verilog, Java, $\LaTeX$ <b>Tools</b> Linux, Vim, Tmux, Git, SVN, Doxygen, Docker <b>Languages</b> Native Mandarin, Fluent English, Basic Japanese
HONORS	<ul style="list-style-type: none"><li>• Teaching Assistant Coordinator, HKUST <i>2018</i></li><li>• University's Scholarship Scheme (8 semesters), HKUST <i>2014 – 2018</i></li><li>• Dean's List (4 semesters), HKUST <i>2015, 2016</i></li></ul>

## PUBLICATIONS

1. Jun Feng, Jiaxu Zhang, **Shixi Chen**, Jiang Xu, "Scalable Low-Power High-Performance Optical Network for Rack-Scale Computers", Silicon Photonics for High-Performance Computing and Beyond, CRC 2022.
2. Fan Jiang, Rafael Kioji Vivas Maeda, Jun Feng, **Shixi Chen**, Lin Chen, Xiao Li, Jiang Xu, "Fast and Accurate Statistical Simulation of Shared-Memory Applications on Multicore Systems," IEEE Transactions on Parallel and Distributed Systems, 2022.
3. Xuanqi Chen, Yuxiang Fu, Jun Feng, Jiaxu Zhang, **Shixi Chen**, Jiang Xu, "Improving the Thermal Reliability of Photonic Chiplets on Multicore Processors," Elsevier Integration, the VLSI Journal, 2022.
4. Chengeng Li, Fan Jiang, **Shixi Chen**, Jiaxu Zhang, Yinyi Liu, Yuxiang Fu, Jiang Xu, "Accelerating Cache Coherence in Manycore Processor through Silicon Photonic Chiplet," IEEE/ACM International Conference on Computer Aided Design (ICCAD), 2022.
5. Yinyi Liu<sup>†</sup>, Jiaqi Liu<sup>†</sup>, Yuxiang Fu, Shixi Chen, Jiaxu Zhang, Jiang Xu, "PHANES: ReRAM-based Photonic Accelerators for Deep Neural Networks," ACM/IEEE Design Automation Conference (DAC), 2022.
6. Yinyi Liu, Jiaxu Zhang, Jun Feng, **Shixi Chen**, Jiang Xu, "A Reliability Concern on Photonic Neural Networks," Design, Automation and Test in Europe Conference and Exhibition (DATE), Antwerp, Belgium, March 2022
7. Yinyi Liu, Jiaxu Zhang, Jun Feng, **Shixi Chen**, Jiang Xu, "Reduce Footprints of Multiport Interferometers by Cosine-Sine-Decomposition Unfolding," Optical Fiber Communication Conference and Exhibition (OFC), San Diego, California, USA, March 2022
8. Jiaxu Zhang, Yingyi Liu, Jun Feng, **Shixi Chen**, Xiaowen Dong, Wutong Yu, Jiang Xu, "UONN: Energy-Efficient Optical Neural Network," Asia Communications and Photonics Conference (ACP), 2021
9. **Shixi Chen**, Jiang Xu, Xuanqi Chen, Zhifei Wang, Jun Feng, Jiaxu Zhang, Zhongyuan Tian, Xiao Li, "Efficient Optical Power Delivery System for Hybrid Electronic-Photonic Manycore Processors," Design, Automation and Test in Europe Conference and Exhibition (DATE), Grenoble, France, March 2020.
10. Zhifei Wang, Jun Feng, Xuanqi Chen, Zhehui Wang, Jiaxu Zhang, **Shixi Chen**, Jiang Xu, Systematic Exploration of High-Radix Integrated Silicon Photonic Switches for Datacenters, IEEE/ACM International Conference on Computer Aided Design (ICCAD), Westminster CO, USA, November 2019.
11. Jun Feng, Zhehui Wang, Zhifei Wang, Xuanqi Chen, **Shixi Chen**, Jiaxu Zhang, Jiang Xu, "Scalable Low-Power High-Performance Rack-Scale Optical Network," PHOTONICS in SC19, Denver, Colorado, November 2019.

<sup>†</sup>These authors contributed equally.

## ACADEMIC SERVICES

### Conference Paper Reviewer

- Asia and South Pacific Design Automation Conference (ASP-DAC)
- International Conference on Hardware/Software Codesign and System Synthesis (CODES+ISSS)
- International Conference on Parallel Processing (ICPP)
- Computer Society Annual Symposium on VLSI (ISVLSI)
- International Symposium on Embedded Multicore/Many-core Systems-on-Chip (MCSoc)
- Design Automation Conference (DAC) Ph.D. forum
- IEEE/ACM International Symposium on Networks-on-Chip (NOCS)
- Design, Automation and Test in Europe (DATE)
- Optical/Photonic Interconnects for Computing Systems (PHOTONIC)
- Optical Fiber Communication Conference and Exhibition (OFC)

### Journal Paper Reviewer

- IEEE Transactions on Computers (IEEE TC)
- IEEE Transactions on Very Large Scale Integration Systems (TVLSI)
- Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD)
- IEEE Transactions on Parallel and Distributed Systems (TPDS)

### Teaching Assistant

- ELEC 2300 Computer Organization, HKUST 2019
- ELEC 4310 Embedded System Design, HKUST 2018
- Teaching Assistant Coordinator, Department of ECE, HKUST 2018
- Participant of EDathon2020, CEDA 2020