陳世希 Ph.D. Candidate

+86-13530088664/+852-67206495
schenax@connect.ust.hk
szchenshixi · shixi-chen
schenax.student.ust.hk

職業履歷

香港科技大學 (HKUST)
博士研究生 *2018*年*9*月 – 現在

- 導師: 須江教授
- 研究方向包括多核計算架構，片上網絡（NoC）以及軟硬件一體化設計，主要工作包括高性能、低功耗設計和基於集成硅光的新型架構探索
- 工作致力於為多核計算系統提供高能效的軟硬件協同的解決方案，為之設計和驗證了數個先進架構、控制模塊及協議

JADE
核心開發者 *2019*年*2*月 – 現在

- https://eexu.home.ece.ust.hk/JADE.html
- 負責開發與維護了一款開源的大型多核系統仿真平台—-JADE，並基於此項目展開多核計算架構的探索工作
- 設計並實現了多個核心功能單元，包括更好的仲裁器（arbitrator），內存架構（memory hierarchy），optical power delivery systems和片上網絡（NoC）。完成了項目的日常維護和構建工具的升級

COSMIC
核心開發者 *2019*年*2*月 – 現在

- https://eexu.home.ece.ust.hk/COSMIC.html
- 負責開發與維護一套基於統計學模型的開源多核系統基準測試工具(benchmark suite)–COSMIC
- 創建並長期維護了5套主流多核測試基準程序，包括APEX, NAS, PARSEC, SPEC, Splash

教育經歷

香港科技大學（HKUST）
電子與計算機工程（Electronic and Computer Engineering） 博士研究生 *2018*年*9*月 – 現在

- 以多核系統研究課題為核心，在研究生期間自底向頂完成了CMOS工藝、硅光通信、進階計算機架構、并行算法、優化算法等系列課程
- 在包含英語寫作、學術交流等諸多項目中均取得良好成績
- CGA: 3.614/4.3
- 導師: 須江教授

香港科技大學（HKUST）
Bachelor degree of Engineering, First Class Honor (最高榮譽學位) *2014*年*9*月 – *2018*年*9*月

- 第一主修為電子與計算機工程（Electronic and Computing Engineering）
- 第二主修為計算機科學（Computer Science）
- CGA： 3.82/4.3 （<10% Graduate Students）

職業技能

編程 ：
精通 C/C++, Python, Bash, CMake, GNU make
熟練 Matlab, Verilog, Java, LaTeX
基礎 VHDL, SQL, HTML, JavaScript
工具 Linux, Vim, Tmux, Git, SVN, Doxygen, Docker
語言 地道普通話, 流利英語, 基礎日語

榮譽

- Teaching Assistant Coordinator, Department of ECE, HKUST *2018*
- University's Scholarship Scheme (共8學期), HKUST *2014 – 2018*
- Dean's List (共4學期), HKUST *2015, 2016*

發表論文

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 [†], Jiaqi Liu[†], 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.

[†]These authors contributed equally.

學術服務

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*