Pengcheng **Xu**

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Aut inveniam viam aut faciam.
"I'll either find a way or make one."—Hannibal

Education

D-INFK, ETH Zürich *Zürich, Switzerland*
Doctorate Computer Science *Sept. 2021 - Jul. 2027*
- Thesis supervisor: Prof. Dr. Timothy Roscoe

D-INFK, ETH Zürich *Zürich, Switzerland*
Computer Science MSc *Sept. 2021 - Sept. 2023*
- Part of the Direct Doctorate in Computer Science program
- Thesis supervisor: Prof. Dr. Torsten Hoefler

School of EECS, Peking University *Beijing, China*
B.Sc. Computer Science and Technology *Sept. 2017 - Jul. 2021*
- "*Summa cum laude*"; Member of the *Turing Class* Honor Program
- Thesis supervisor: Prof. Yun Liang

Academic Experiences

Scalable Parallel Computing Lab (SPCL) @ ETH Zürich *Zürich, Switzerland*
Master Thesis (with Prof. Dr. Torsten Hoefler) *Mar. 2023 - Sept. 2023*

NetOS, Systems Group @ ETH Zürich *Zürich, Switzerland*
Semester Project (with Prof. Dr. Timothy Roscoe) *Oct. 2022 - Feb. 2023*

Center for Energy-efficient Computing and Applications (CECA) @ PKU *Beijing, China*
Undergraduate Research (with Prof. Yun Liang) *Dec. 2017 - Jul. 2021*

Parallel Systems Architecture Lab (PARSA) @ EPFL *Lausanne, Switzerland (remote)*
Research Intern (with Prof. Babak Falsafi) *Jul. 2020 - Jan. 2021*

XG Lab @ Alibaba DAMO Academy *Beijing, China*
Academic Collaboration (with Prof. Chenren Xu & Dr. Pengyu Zhang) *Sept. 2020 - Jan. 2021*

PKU Student Supercomputing Competition Team (PKUSC) *Beijing, China*
Team Leader *Nov. 2017 - Nov. 2020*

Work Experiences

SenseTime *Beijing, China*
Research Intern *Jun. 2019 - Dec. 2019*

Teaching Experiences

System Programming and Computer Architecture, ETH Zürich *Zürich, Switzerland*
Assistenz (head TA) *2024*

Advanced Operating Systems, ETH Zürich *Zürich, Switzerland*
Assistentz (TA), Hilfsassistenz (HA) *2022 - 2024*

Computer Systems, ETH Zürich *Zürich, Switzerland*
Hilfsassistenz (HA) *2022*

Computer Networks (Honor Track), Peking University *Beijing, China*
Teaching Assistant (TA) *Sept. 2020 - Feb. 2021*

Publications

Pengcheng Xu. "Full-System Evaluation of the sPIN In-Network-Compute Architecture" *ETH Zurich*
ETH Library *Sept. 2023*

Pengcheng Xu. "Enzian Firmware Resource Interface" *ETH Zurich*
ETH Library *Feb. 2023*

Zejia Fan, Yuchen Gu, Zhewen Hao, Yueyang Pan, **Pengcheng Xu**, Yuxuan Yan, Fangyuan Yang, Zhenxin Fu, Yun Liang. "Critique of 'MemXCT: Memory-Centric X-Ray CT Reconstruction With Massive Parallelization' by SCC Team From Peking University" *Journal*
IEEE Transactions on Parallel and Distributed Systems (TPDS) *Jan. 2022*

Qingcheng Xiao, Size Zheng, Bingzhe Wu, **Pengcheng Xu**, Xuehai Qian, Yun Liang. "HASCO: Towards Agile HArdware and Software CO-design for Tensor Computation" *Worldwide*
International Symposium on Computer Architecture (ISCA) *June 2021*

Yihua Cheng, Zejia Fan, Jing Mai, Yifan Wu, **Pengcheng Xu**, Yuxuan Yan, Zhenxin Fu, Yun Liang. "Critique of 'Planetary Normal Mode Computation: Parallel Algorithms, Performance, and Reproducibility' by SCC Team From Peking University" *Journal*
IEEE Transactions on Parallel and Distributed Systems (TPDS) *Jan. 2021*

Pengcheng Xu, Yun Liang. "Automatic Code Generation for Rocket Chip RoCC Accelerators" *Virtual Workshop*
Fourth Workshop on Computer Architecture Research with RISC-V (CARRV 2020), co-located with ISCA 2020 *May 2020*

Honors & Awards

2020 **Second Place**, Virtual Student Cluster Competition at SC'20 *Global Event*
  • Worked as leader in charge of cloud cluster management and the mystery task
  • Team ranked top on the CESM (Community Earth System Model) application
2019 **First Prize**, ASC Student Supercomputing Challenge 2019 *Dalian, China*
  • Worked as leader in charge of system install and administration, benchmarks, logistics, and the mystery task
2019 **SenseTime Scholarship 2019** *Beijing, China*
2018 **Award for Scientific Research**, Peking University *Beijing, China*
2018 **Prize of Excellence**, IBM OpenPOWER/CAPI and OpenCAPI Heterogeneous Computing Design Contest *Beijing, China*
  • Worked to build an FPGA accelerator for *BCrypt* (widely-used hashing algorithm) on Xilinx UltraScale+ FPGAs
  • Developed on the OpenCAPI FPGA-host platform for high-performance, cloud-oriented acceleration
2018 **Second Prize**, Peking University Collegiate Programming Contest *Beijing, China*
2018 **Accepted & Passed**, Google Summer of Code 2018 with Gentoo Foundation *Global Event*
  • Worked to develop solution to *modularize the Android system upgrade with Portage*
  • Enabled utilization of mature Unix technologies in mobile computing