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Yueyang Pan | Resume

- Status: Undergraduate in Computer Science and Technology, PKU
- Skills: C, C++, Python, Bash, SQL, CUDA, MPI, OpenMP, Vivado, Stata
- Interests: HPC, Computer Networks, Operating Systems
- Activities: Triathlon, Chorus, Reading, Stargazing

Education

'18/09 - '22/07 **Bachelor of Science** — School of EECS, Peking University

- Major: Computer Science and Technology
- Minor: Finance
- Averaged GPA: 3.83 /4 (12/230)
- "Summa cum laude"; Member of the Turing Class Honor Program
- Advisor: Professor Chenren Xu from Peking University

Academic Experience

'20/06 - now **Undergraduate Research** — SOAR Lab@PKU

- With Professor Chenren Xu who heads the Software-hardware Orchestrated ARchitecture (SOAR) Lab at the Center for Energy-efficient Computing and Applications (CECA), Peking University
- Carry out the first extensive measurement study on the High-Speed Rail (HSR) of the operating 5G system
- Establish an experiment platform for a fair performance comparison between the existing cellular networks
- Build a toolkit that enables cross-layer analysis of throughput, latency and handovers
- Provide suggestions on the evolution of current 5G system

'21/08 - 'now **Research Intern** — DSLab@EPFL

- With Professor George Candea who heads the Dependable Systems Lab (DSLab) at École polytechnique fédérale de Lausanne (EPFL)
- Implement logically simple and high-speed driver for the new 100 Gb Intel NIC
- Reschedule the buffer recycling process and evaluate its performance with real network functions

'20/11 - now **Team Leader** — PKUSC

- Head the Peking University Super Computing Team (PKUSC)
- Organize self-teaching tutorials on HPC related areas
- Optimize real-world HPC benchmarks and applications for performance and efficiency
- Gain experience in cluster building and maintenance, as well as application profiling and tuning strategies
- Publish competition-related reports on the IEEE Transactions on Parallel and Distributed Systems

Teaching Experience

'19/08 **Teaching Assistant** — Summer Paper Reading Group

- Select the classical papers from different areas in computer science
- Deliver example presentations and organize related discussions

LinkedIn: **https://www.linkedin.com/in/yueyang-pan-167a221a4/** · Github: **https://github.com/PanJason**

'21/11 **Teaching Assistant** Computer Networks (Honor Track)

- Invited to give a guest lecture on the cellular network systems (1G to 5G) to the students
- Design test questions for the course quiz

Publications

'21/06 **Critique of "MemXCT: Memory-Centric X-ray CT Reconstruction with Massive Parallelization" by SCC Team from Peking University**

- Authors: Zhewen Hao*; Zejia Fan*; Yuchen Gu*; Yueyang Pan*; Pengcheng Xu*; Yuxuan Yan*; Fangyuan Yang*; Zhenxin Fu; Yun Liang
- *: these authors contributed equally to this work
- IEEE Transactions on Parallel and Distributed Systems

'21/12 **The First 5G-LTE Comparative Study in Extreme Mobility**

- Authors: Yueyang Pan*; Ruihan Li*; Chenren Xu
- *: these authors contributed equally to this work
- ACM SIGMETRICS / IFIP PERFORMANCE 2022

Awards

'20/11 **2nd Place, SC 20 Student Cluster Competition** Global

- Vice leader tuning the real HPC benchmarks
- Team ranked top on the CESM (Community Earth System Model) application

'21/05 **4th Place, ASC Student Supercomputer Challenge 20-21** Global

- Team leader in charge of the cluster setup, maintenance and power management
- Responsible for the HPC benchmarks and the mystery application
- Optimize Presto, a pulsar search toolkit, with a hardware-software combined approach

'21/11 **5th Place, SC 21 Student Cluster Competition** Global

- Team leader setting up the Azure and Oracle cloud cluster
- Responsible for the HPC benchmarks, the mystery application and the report of the reproduce task
- Team ranked top on the mystery application (CosmicTagger)

'21/08 **2nd Prize, The 2021 National Computer System Ability Competition for undergraduates – Compiler Track** National

- Design two levels of Intermediate Representations (IRs) and build the Harmony Compiler
- Peep hole and Arm-specific optimizations
- Establish the automatic test platform for the compiler

'21/04 **2nd Prize, The 18th PKU Collegiate Programming Contest (PKU-CPC)** PKU

- Member of the team *Man for Nothing Will Be Dispatched*

Honors

'21/09 **China National Scholarship** National

- Ministry of Finance; Ministry of Education

'19/10 **Schlumberger Scholarship** PKU

- The Schlumberger Limited

'21/09 **John Hopcroft Scholarship** PKU

- The Center on Frontiers of Computing Studies (CFCS), Peking University

'21/09 **Merit Student** PKU

- Peking University

Social Activities

'19/05-'20/05 **The Secretary of PKUYAS** PKU

- Peking University Youth Astronomy Society

'19/07- now **The Class Monitor** PKU

- Turing Class, the school of EECS, PKU

'21/01- now **The Administrator of the Cluster** PKU

- Professor Yun Liang's group, CECA, PKU

Selected Projects

'20/05 **Plate Detection** PKU

- A system that utilizes a compact Faster R-CNN for plate detection and recognition

'20/12 **Jason Protocol Stack** PKU

- Ethernet, IP and TCP implemented from scratch with libpcap and epoll
- Hands-on applications that verify the correct implementation of RFC protocols

'21/08 **Harmony Compiler** PKU

- High-performance compiler that translates SysY language to target ARM v7 assembly
- Design two levels of Intermediate Representations (IRs)
- Leverage graph-coloring register allocation, data-flow algorithms (e.g. DCE, CSE, LICM), peep-hole optimizations and Arm-specific instructions (e.g. conditional codes)

'21/11 **TinyNF for 100 Gb** EPFL

- Simplified NIC driver for 100 Gb Intel E810
- Adopt the new TinyNF driver model which is tailored for network functions
- Provide user-friendly interfaces and comparable performances against DPDK