Kaiwen Xue (Kevin)

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EDUCATION

Carnegie Mellon University — Pittsburgh, PA
Master of Science in Computer Science, QPA: 3.95/4.33 — 2022.9–2023.12 (Expected)

Columbia University* — New York, NY
Bachelor of Arts, Major: Computer Science, GPA: 4.03/4.33, *summa cum laude* — 2020.9–2022.5

City University of Hong Kong* — Hong Kong
Bachelor of Science, Major: Computer Science, GPA: 4.03/4.33, *First Class Honours* — 2017.9–2020.5

**Joint Bachelor's Degree, equivalent to completing the degree at either institution*

Most Relevant Courses: Operating Systems (Columbia W4118), Distributed Systems (CMU 15-440), Compiler (Columbia W4115), Computer Networks (CityU CS3201), Database (Columbia W4111), Functional Programming (Columbia W4995)

SKILLS

- Programming Languages: C, C++, Go, Python, Bash, OCaml, Haskell, Java
- Technologies: Linux kernel, QEMU, Git, TensorFlow, PyTorch, AWS, Google Cloud Platform, MySQL
- Natural Languages: English (Bilingual Proficient), Mandarin and Cantonese Chinese (Native)

EXPERIENCE

Rivos Inc. — Mountain View, CA
Member of Technical Staff Intern - Software — 2023.5-2023.8 (Expected)
- Worked in software team at Rivos Inc., a stealth-mode startup building RISC-V computer

Columbia University — New York, NY
Teaching Assistant - W4118 Operating Systems I — 2021.9-2022.5
- Cooperated with a teaching team of 8 to mentor a graduate-level 120-student class composed of advanced UNIX programming, operating systems concepts, and Linux kernel hacking for two consecutive semesters
- Held office hours, graded homework and exams, and maintained assignments on Linux kernel programming
- Received over 4.5 out of 5.0 in individual TA evaluation submitted by students

REFEREED PUBLICATIONS

- Kaiyang Zhao, **Kaiwen Xue**, Ziqi Wang, Dan Schatzberg, Leon Yang, Antonis Manousis, Johannes Weiner, Rik van Riel, Bikash Sharma, Chunqiang Tang, and Dimitrios Skarlatos, "Contiguitas: The Pursuit of Physical Memory Contiguity in Datacenters," *Proceedings of the 50th Annual International Symposium on Computer Architecture (ISCA 2023)*, Orlando, FL, June 17-21, 2023. (21% accepted, 79/372, **Best Paper Award**)

SELECTED PROJECTS

Confidential Virtual Machine Live Migration — New York, NY
Columbia University, Research Project — 2021.6-2022.5
- Extended feature of SeKVM, a secure cloud Kernel-based Virtual Machine (KVM) hypervisor enabling a software-based confidential virtual machine (VM)
- Re-implemented SeKVM on multiple Linux kernel versions and ARM hardware
- Designed VM live migration on SeKVM, reducing VM downtime to less than 3X of vanilla KVM
- Devised a shared mapping kernel data structure to support migrating pages VM shared with hypervisor and implemented it in KVM and QEMU

Pseudo Code Language Compiler New York, NY
Columbia University, Course Final Project, W4115 Programming Languages and Translators 2022.2-2022.5

- Led a team of 4 to develop in OCaml a compiler for CLeuRoS, a pseudo-code-like programming language
- Designed high-level syntax of CLeuRoS and documented it in a language manual
- Implemented lexer, parser, and semantic checker using ocamllex and ocamlyacc
- Constructed a code generator converting abstract syntax tree into LLVM IR, supporting I/O, control flow, and basic data structures

HONORS

- ISCA Best Paper Award - ACM SIGARCH, 2023
- Member, Sigma Xi - Sigma Xi Committee, 2022
- Russell C. Mills Award - Columbia Fu Foundation School of Engineering and Applied Science, 2022
- Member, Phi Beta Kappa - Phi Beta Kappa New York Delta Chapter, 2022
- Member, GS Honor Society - Columbia School of General Studies, 2021
- Chow Sang Sang Joint Bachelor's Degree Scholarship - Chow Sang Sang Group, 2019
- Hong Kong SAR Government Scholarship - Hong Kong SAR Government Education Bureau, 2019

EXTRACURRICULAR ACTIVITIES

Flame (Wei Lu) Hong Kong
Person in Charge - City University of Hong Kong 2018.10-2019.9

- Served as school deputy of a Chinese student media publishing opinion pieces on college student life and social issues
- Edited pieces produced by members from various institutions
- Organized multiple iterations of Fireside Chat (Wei Lu Ye Hua), a panel for members to express opinions on given topics