

KELE HUANG

Institute of Computing Technology, Chinese Academy of Sciences

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🎓 EDUCATION

Institute of Computing Technology, Chinese Academy of Sciences

Sep.2018 - Jul.2021

M.S., in Computer Architecture

- Advisor: Prof. Jian Wang
- Research Areas: computer architecture, virtualization, binary translation
- GPA: 3.39/4

Central South University

Sep.2014 - Jul.2018

Bachelor student in Microelectronics Science and Engineering, Rank: 2nd/50

📖 PUBLICATIONS

- **Kele Huang**, Fuxin Zhang, Cun Li, Gen Niu, Junrong Wu, Tianyi Liu. "BTMMU: An Efficient and Versatile Cross-ISA Memory Virtualization", is accepted to ACM SIGPLAN/SIGOPS International Conference on Virtual Execution Environments (VEE), 2021.
- Wu Junrong, Zongzheng Wen, Sanyuan Zhao, **Kele Huang**. "Video semantic segmentation via feature propagation with holistic attention." Pattern Recognition (PR), 2020.

👥 RESEARCH EXPERIENCE

Cross-ISA Memory Virtualization

Mar.2020 - Present

Role: Graduate Researcher

Advisor: Prof. Fuxin Zhang

- Charactering and evaluating the existing optimal approaches, including ESPT (VEE 2014), HSPT (VEE2015) and Captive (TOCS 2020), with respect to efficiency and applicability. And Reimplement HSPT.
- Proposing an efficient and versatile cross-ISA memory virtualization method BTMMU, which solves almost all known limitations in cross-ISA memory virtualization. Paper is accepted to [VEE'21].

User Mode Binary Translator Based on QEMU

Jul.2019 - Mar.2020

Role: Graduate Research Assistant

Advisor: Prof. Fuxin Zhang

- Used register mapping, translation block link methods to emulate the guest's userland binary, which is much more efficient than the pure software emulation of QEMU.
- Emulated the x86 binary behavior based on the hardware extensions on Loongson 3A4000.
- A patent "A fast emulation of x87 float stack method" is accepted, as the first inventor.

Open Source Community

- Fixed the self-modifying code support bug of MIPS backend (QEMU).
- Fixed the performance bug of MIPS's software TLB (QEMU).

🏆 AWARDS

Outstanding Student Key Laboratory of Computer System and Architecture, ICT CAS

Jan. 2020

National Scholarship

Sep. 2017

Provincial Second Prize University Student Electronic Design Competition in Hunan Province

Jul. 2016

⚙️ SKILLS

- Skilled in C, vim, git, Linux. Familiar with data structures and algorithms. have good programming style.
- Sophomore year as the president of Central South University Electronic Design Fans Association.