+1 (413)931-1735
+86 18801011904
chendi.li@outlook.com

Chendi Li

looking for a 2022 Fall Ph.D. program

Linkedin.com/li-chendi

I am currently a graduate student at the State Key Laboratory of Computer Architecture, Institute of Computing Technology, Chinese Academy of Sciences (CARCH, ICT, CAS), supervised by Prof. Yunquan Zhang. My research interests including high-performance computing, optimized BLAS library, sparse matrix multiplication, CPU and GPU acceleration. The expected graduation date is 2022 Summer.

Education

Master of Computer Science, University of Chinese Academy of Sciences GPA 3.26/4.0 **Mon 2019 — June 2022**
Bachelor of Computer Science, Hunan Agricultural University GPA 2.08/4.0 **Sep 2014 — June 2018**

Research Experience

Graduate Student Research Assistant **September 2019 — Now**
Institute of Computing Technology, Chinese Academy of Sciences Beijing

Undergraduate Research Assistant **January 2018 — June 2019**
Institute of Computing Technology, Chinese Academy of Sciences Beijing

Publications

1. **[IEEE ISPA 2021] Chendi Li**, Haipeng Jia, Hang Cao, et al. AutoTSMM: An Auto-tuning Framework for Building High-Performance Tall-and-Skinny Matrix-Matrix Multiplication on CPUs.
2. **[IEEE ICPADS 2021, under review]** Jianyu Yao, Boqian Shi, Chunyang Xiang, Haipeng Jia, **Chendi Li**, et al. IAAT: An Input-Aware Adaptive Tuning framework for Small GEMM.
3. **[CCF HPC China 2020] Chendi Li**, Guangting Zhang, Haipeng Jia. Fast Computation of Elementary Functions on ARM Platforms(in Chinese)

Research Projects

OpenBLAS, Contributor **Nov 2020 — Now**
- OpenBLAS is an open-source BLAS library. I'm responsible for optimizing pre-pack matrix-matrix multiplication and triangular solve with multiple right-hand-sides(TRSM) on ARMv8 and X86 platforms.

AutoTSMM, Author **Nov 2020 — Now**
- I designed AutoTSMM independently, which is used to build high-Performance tall-and-skinny matrix multiplication on all mainstream CPUs. And the performance is competitive with state-of-the-art TSMM implementation from Intel MKL and outperforms all conventional GEMM implementations on X86 and ARMv8 platforms. AutoTSMM was accepted by IEEE ISPA 2021.

Small-GEMM-JIT, Contributor **Jul 2021 — Now**
- This is a just-in-time(JIT) small GEMM framework targeting CPUs. I helped to launch the project and did a lot of investigations on how to use JIT tools. I participate in brainstorming and conferences every week.

IAAT, Contributor **Nov 2020 — Sep 2021**
- IAAT is an input-aware adaptive tuning framework for small GEMM. I participated in brainstorming and conferences every week, and help completed the paper. IAAT is being reviewed by IEEE ICPADS 2021.

OpenVML, Co-author **Jan 2020 — Oct 2020**
- OpenVML is a vector math library. I was responsible for optimizing the math functions on the ARMv8 platform. The experimental results show that OpenVML achieve a performance improvement of 66% to 540% compared with C standard library function, and a performance improvement of 12% to 90% compared with Arm Performance Libraries(ARMPL). The paper "Fast Computation of Elementary Functions on ARM Platform" was accepted by HPC China 2020.

AutoFFT, Contributor **Jan 2018 — June 2019**
- AutoFFT is a template-based FFT codes auto-generation framework for ARM and X86 CPUs. I was mainly responsible for optimizing small-scale FFT on ARMv8 architecture. Later, I also did some preliminary work on multi-threading and 2D-FFT. AutoFFT is the first research project I participated in, and I learned a lot from it. AutoFFT was accepted by SC19.

Technical Skills

Tools	Linux, Git, Vim, CMake, GDB, OpenMP, Pthreads
Skills	High Performance Computing, Parallel Programming
Programming/Scripting	C, Latex, Assembly, Python, JavaScript, Neon intrinsic