

# Chendi Li

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looking for a 2022 Fall Ph.D. program

Personal website

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, CPU and GPU acceleration, optimized BLAS library.  
The expected graduation date is 2022 Summer.

## EDUCATION

<b>Master of Computer Science</b> , Institute of Computing Technology, Chinese Academy of Sciences	<b>Sep 2019 — June 2022</b>
<b>Bachelor of Computer Science</b> , Hunan Agricultural University	<b>Sep 2014 — June 2018</b>

## RESEARCH EXPERIENCE

<b>Graduate Student Research Assistant</b> Institute of Computing Technology, Chinese Academy of Sciences	<b>September 2019 — Now</b> Beijing
<b>Undergraduate Research Assistant</b> Institute of Computing Technology, Chinese Academy of Sciences	<b>January 2018 — June 2019</b> Beijing

## PUBLICATIONS

- [**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.
- [**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.
- [**CCF HPC China 2020**] **Chendi Li**, Guangting Zhang, Haipeng Jia. Fast Computation of Elementary Functions on ARM Platforms(in Chinese)

## RESEARCH PROJECTS

<b>AutoTSMM</b> , Author	<b>Nov 2020 — Now</b>
• 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.	
<b>OpenBLAS</b> , Contributor	<b>Nov 2020 — Now</b>
• 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.	
<b>IAAT</b> , Contributor	<b>Nov 2020 — Now</b>
• IAAT 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 is being reviewed by IEEE ICPADS 2021.	
<b>OpenVML</b> , Co-author	<b>Jan 2020 — Oct 2020</b>
• OpenVML is a vector math library. I was responsible for optimizing the math functions on the ARMv8 platform. The OpenVML achieve a outstanding performance improvement C standard library function and ARMPL. The paper "Fast Computation of Elementary Functions on ARM Platform" was published in HPC China 2020.	
<b>AutoFFT</b> , Contributor	<b>Jan 2018 — June 2019</b>
• 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 published in SC'19 and TPDS'20.	

## AWARDS & HONORS

<b>MS</b>	<b>2020</b> First Scholarships (10000CNY); <b>2021</b> Second-class scholarship (7000CNY)
<b>BA</b>	<b>2015</b> First prize at HAU Collegiate Programming Contest; <b>2015</b> Winning prize in Hunan ACM-CCPC; <b>2015</b> Winning prize in CCPC Xiangtan Invitational Tournament; <b>2015</b> Outstanding Volunteer

## TECHNICAL SKILLS

<b>Tools</b>	Linux, Git, Vim, CMake, GDB, OpenMP, Pthreads
<b>Programming/Scripting</b>	C, Latex, Assembly, Python, Neon intrinsic