CHEN Han

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CONTACT INFORMATION

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EDUCATION

National University of Singapore, Singapore. 2023–2025(Expected)
- Master of Computing, Computer Science Specialization. GPA: 4.38/5.0

South China University of Technology (SCUT), Guangzhou, China. 2019–2023
- B.Eng., Software Engineering. GPA: 3.61/4.0

PRIZES AND AWARDS

- **Excellent Degree Dissertation of South China University of Technology** 2023
- **Honorable Mention** in Mathematical Contest in Modeling 2023
- **National Scholarship** 2022
- *Bronze Medal (46th)* in ICPC Asia-East Continent Final(Xi An) 2022
- *101/1608* in CCF-DBCI Competition of "Small Sample Data Classification" 2022
- *Silver Medal (46th)* in ICPC Asia Regional Contest(Ji Nan) 2021
- *44/3567* in CCF-DBCI Competition of "Recognition of figure skaters' skeleton points based on Paddle" 2021

RESEARCH EXPERIENCE

- ***Symmetric Matrix Solving Algorithm Parallel Optimization for ARM Architecture***
  Mentor: Prof. Deyou TANG May-Dec. 2022
  - Optimize and parallel Bounded Bunch-Kaufman Algorithm(*sysv_rk subroutine of LAPACK) for solving symmetric matrix on ARM server processor with NEON instruction set and openMP.
  - Implement a parallel column reordering method in row swap of solving symmetric matrix to enhance memory access locality for column major matrix for better cache hit rate and parallelism, achieving a performance improvement from 320Gflops to 580Gflops.
  - Implement the same optimization on Skylake Intel processor and achieve 2-5x multi-core speedup than MKL library for *sytrs_3 subroutine of LAPACK.
  - Awarded as the Excellent Degree Dissertation of South China University of Technology.

- ***Research Assistant*** in **Hong Kong University of Science and Technology, Guangzhou**
  Mentor: Prof. Zeyi WEN Apr-Sept. 2023
  - Implement a library of parallel hyper graph partitioning with openMP task.
  - Realize a multiple node contraction algorithm for graph coursenning.
  - Research parallel graph partitioning algorithm and adapt it for fill-in reduction of sparse matrix.

- ***Internship*** in **SG Digital Trust Lab, Singapore Research Center, 2012 Laboratory**
  Mentor: Dr. Tao HUANG Jan.-now 2024
  - Research on high-performance symmetric encryption algorithm and SIMD optimization with AES instructions.
  - Optimize LOL-MINI-NMH algorithm with scroll array and XOR fusion feature of KUN-PENG 920 processor to improve the performance from 7.1Gbps to 8.5Gbps.

○ Realize a new stream encryption algorithm with 49Gbps performance on KUNPENG 920 processor with the same AES instructions involved(3:1) as SOTA method Rocca which run at 38Gbps on the same processor.

TECHNICAL
SKILLS

- *English*: IELTS(6.5), CET-4, CET-6.

- *Programming Languages*: C/C++, Fortran, p4-16, Python, SQL, LaTeX.

- *Technical Skills*: openMP, SIMDs(NEON, AVX512), MPI, PyTorch, CUDA.

- *TestDemo Certificate*: C++, TOP 10%, LINUX, TOP 10%, PYTHON, TOP 10%.

- *Kaggle Certificate*: Data Visualization, Intro to Machine Learning, Intro to Deep Learning, Intro to Game AI and Reinforcement Learning.

EXCHANGE
EXPERIENCE

- **Online Academic Program on Machine Learning, McGill University**   Jan.-Feb. 2022