Yufan Xia

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About Me

I am a 23 year-old postgraduate student, I switched to Computer Science at 1.5 years ago. I was studying Aviation management as my bachelor's degree. I have one on-going project for ML&HPC, my expected graduation is June 2022.

Education

Australian National University (ANU); Canberra, Australia   2020-Present
GPA: 6.63/7, Master of Computing (Advanced)   Expected Graduation: June 2022

Royal Melbourne Institute of Technology (RMIT); Melbourne, Australia
                                                                 2018-2020
Bachelor of Aviation Management

Nanjing Uni of Aeronautics &Astronautics ; Nanjing, China   2016-2020
Bachelor of Aviation Management

Research Experience

ADSALA, Australian National University   2021-Present
Supervisor: Professor Amanda Barnard, Dr. Giuseppe Barca

- An architecture & data-structure aware linear algebra library

- Uses ML models to decide on the best hardware/ data-structure/ package/ algorithm

- Automatic sampling & training on each hardware (mainly HPC systems)

- Current result gives over 90% performance boost on MKL multicore GEMM operations

- Next step will be on other packages on CPU and GPU as well as auto-choose over hardwares

Publications

School Experience

University Tutor, Australian National University   2022-2022
- Tutoring the course COMP4300 Parallel System, lecturer is Dr Sid Chau

- Hosting tutorial sessions, marking student works.

- Composing exercises, assignments and lab content.

2-D Advection Solver Development on Gadi HPC   2021-2021
- Using block decomposition and halo exchange to parallelize advection calculation
- Uses MPI, OpenMP and CUDA as three different tools
- Uses techniques like wide halo, communication overlapping, or a combination to make faster
- Evaluates the effect of different block/ grid sizes and shared memory when on CUDA
- Update field in a back-and-forth way for each iteration, which saves the time for copying data

Game Solver Development   2020-2020
- Given a specific starting, need to use 10 different pieces fill the board with no overlap
- Developed a recursive game solver

Working Experience

Department of Cloud Computing, iFlytek; Hefei, China   2020-2020
- Intern as software developer of level 2, uses C++ as the main language
- Dealing with streaming audio, as well as chunks of audio & images
- Help the group to integrate user's ML abilities into the platform.

Institute of Computing Technology, Chinese Academy of Science; Beijing, China
                                                                        2019-2019
- Short term intern, worked on a portfolio composition project using pandas
- Achieved a balance between risk and revenue, adjusted dynamically using real-time data
- Good result accomplished across the groups

Additional

- Specializations: HPC and System (Core Courses: Parallel System), Intelligent System (Core Courses: Machine Learning, Convex Optimization, Data Mining, Statistical Machine Learning, Computer Vision)
- Relevant Courses: Structured Programming, Software Construction, Relational Database
- Programming Languages: Python, C++, Java, SQL, HTML/CSS
- Others: I have great interest in HPC, Quantum Computing and CV/VR