Wei Siew Liew

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Education

University of Utah — *Salt Lake City, Utah, USA*
Ph.D (Computer Science) — *Aug 2024 - Present*

National University of Singapore — *Singapore, Singapore*
Bachelor of Engineering (Computer Engineering) — *Aug 2019 - Aug 2024*

National University of Singapore — *Singapore, Singapore*
Bachelor of Business Administration — *Aug 2019 - Aug 2024*

Research Experience

School of Computing, National University of Singapore — *Singapore, Singapore*
Student Researcher — *Jun 2022 - Aug 2022*

- Wrote Chisel3 code that generates Verilog designs for hardware accelerators according to configurable parameters.
- Modelled AXI4-Streams in C++ for testing the hardware accelerator design in C++ simulation.
- Helped in debugging hardware accelerator designs using Verilator models and C++ simulation tools.
- Collaborated with another undergraduate student to automate the process of integrating new hardware designs with Xilinx FPGA shells.

Teaching Experience

School of Computing, National University of Singapore — *Singapore, Singapore*
Student Tutor for CS2100 Computer Organization — *Aug 2022 - Nov 2023*

- Conducted weekly tutorial classes with students.
- Reviewed course materials and discussed issues with lecturers and other tutors.
- Graded assignments for tutorial classes.
- Clarified doubts that students had through email, video calls and class forums.

Undergraduate Research Projects

Undergraduate Research Project in Computing: Accelerating SAT Solvers in Hardware/Software — *Singapore, Singapore*
National University of Singapore — *Jan 2021 - Nov 2021*

- Implemented the DPLL algorithm for Boolean Satisfiability (SAT) solving in an execution model that supports speculative execution.
- Tested and debugged the implementation in Xilinx Vivado simulation.
- Analyzed hardware resource utilization reports to determine scalability limits of the implementation.
- Experimented with using under-utilized hardware resources to improve scalability.

Final Year Project: Accelerating SAT solver solutions with FPGAs — *Singapore, Singapore*
National University of Singapore — *Jan 2023 - Nov 2023*

- Extended SAT solver to support conflict driven clause learning and solver restarts.
- Implemented SAT solver on FPGA hardware to evaluate performance.
- Identified areas for optimization by collecting performance data from FPGA evaluation.