

Po Jui (Elton) Shih

CONTACT INFORMATION Computer Science Building (K17), Engineering Rd
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RESEARCH FOCUS *hardware acceleration, computer architecture, embedded systems, computer networks, bioinformatics*

EDUCATION **University of New South Wales, Sydney, Australia**
B.Eng. (Class I Honours in Computer Engineering), WAM: 84/100 Feb 2018 - Dec 2021

- Thesis title: *Hardware Accelerated Real-Time Selective Genome Sequencing*
- Advisor: *Prof. Sri Parameswaran*
- Selected Coursework: *Digital Circuits and Systems, Computer Architecture, Extended Operating Systems, Extended Algorithms and Programming Techniques, Design Project B (Hardware Accelerator Design), Mobile Data Networking*

HONORS AND AWARDS

First Class Honours, UNSW Faculty of Engineering	2021
Outstanding Undergraduate Thesis, UNSW School of CSE (one of 10)	2021
Dean's Honours List, UNSW Faculty of Engineering	2018, 2019, 2020
2st Place, UNSW COMP4601: Design Project B (hardware acceleration)	2021
1st Place, UNSW COMP3601: Design Project A (hw-sw co-design)	2020
1st Place, UNSW COMP3222: Digital Circuits and Systems	2019
3rd Place, UNSW COMP2121: Microprocessors and Interfacing	2019

WORK AND RESEARCH EXPERIENCE **Audinate, Sydney, Australia**

Research Engineer II	Aug 2022 - Present
Research Engineer I	Jan 2022 - Aug 2023
Research and Development Engineering Intern	Winter 2021
Research and Development Engineering Intern	Summer 2020
Research and Development Engineering Intern	Summer 2019

School of CSE, UNSW, Sydney, Australia
Casual Academic Feb 2020 - Present

Embedded Systems Research Group, UNSW, Sydney, Australia
Undergraduate Researcher Nov 2020 - May 2022

- Worked on accelerating selective genome sequencing on resource-constrained edge devices through hw-sw co-design [GigaScience 2023]
- Supervisor: Prof. Sri Parameswaran (co-advised by Dr. Hasindu Gamaarachchi, and Dr. Hasaan Saadat)

PUBLICATIONS *Peer-reviewed Journal Articles*

Efficient real-time selective genome sequencing on resource-constrained devices
Po Jui Shih, Hassaan Saadat, Sri Parameswaran, and Hasindu Gamaarachchi.
GigaScience 12 (giad046), 2023.

Dissertation

Hardware accelerated real-time selective genome sequencing
Po Jui Shih.
B.Eng. Honours Thesis, UNSW, 2021.

TALKS	<p><i>Poster Presentations</i></p> <p>Efficient real-time selective genome sequencing on resource-constrained devices <u>Po Jui Shih</u>, Hassaan Saadat, Sri Parameswaran, and Hasindu Gamaarachchi. <i>Australian Bioinformatics And Computational Biology Society Conference (ABACBS) 2023</i>, Dec 2023.</p> <p>Efficient real-time selective genome sequencing on resource-constrained devices <u>Po Jui Shih</u>, Hassaan Saadat, Sri Parameswaran, and Hasindu Gamaarachchi. <i>COMBINE Symposium 2023</i>, Dec 2023.</p> <p>Hardware accelerated real-time selective genome sequencing <u>Po Jui Shih</u>. <i>Outstanding Undergraduate Thesis Showcase, UNSW School of CSE</i>, Dec 2021.</p>
TEACHING EXPERIENCE	<p>2023 Term 3, COMP3601 Design Project A, <i>Guest lecturer</i>, UNSW</p> <p>2023 Term 2, DESN2000 Eng Design & Prof Practice (COMP), <i>Academic Tutor & Guest lecturer</i>, UNSW</p> <p>2022 Term 3, COMP3601 Design Project A, <i>Course Coordinator & Guest lecturer</i>, UNSW</p> <p>2021 Term 3, COMP3601 Design Project A, <i>Academic Tutor</i>, UNSW</p> <p>2021 Term 2, COMP1521 Computer Systems Fundamentals, <i>Academic Tutor & Lab Assistant</i>, UNSW</p> <p>2020 Term 1, COMP2121 Microprocessors and Interfacing, <i>Academic Tutor</i>, UNSW</p>
ADVISING	<p>Undergraduate Honours Students</p> <p>Katelyn Mak (with H. Gamaarachchi), UNSW, 2023-</p>
PROFESSIONAL SERVICES	<p><i>External Reviewer</i>: ASP-DAC 2024</p>
OPEN-SOURCE SOFTWARE	<p>HARU: A hw-sw co-design for real-time selective sequencing on low-cost edge devices. [Github]</p> <p>sigfish-haru: A fast selective sequencing software using HARU for acceleration. [Github]</p> <p>RUscripts-R9: An upgraded RUscripts supporting Python3, R9 flowcell, slow5 and more. [Github]</p> <p>HARU-HLS: An early POC for HARU using HLS and client-server architecture. [Github]</p>
COMPUTER SKILLS	<p>Programming languages: <i>C/C++, VHDL, Verilog, Python, Go</i></p> <p>Tools: <i>Vivado, Vitis HLS, Quartus, Chisel, PetaLinux, Yocto, Buildroot, Matlab, Wireshark</i></p> <p>RTOS: <i>Zephyr RTOS, FreeRTOS, ThreadX</i></p> <p>Microprocessor architectures: <i>ARM, RISC-V, AVR, MIPS, Xtensa</i></p> <p>Others: <i>eXpress Data Path (XDP), BPF, JTAG & OpenOCD</i></p>
OTHER/PERSONAL	<p>Languages: <i>English</i> (native proficiency), <i>Traditional Chinese Mandarin</i> (native proficiency)</p> <p>Citizenship: <i>Australian</i></p>