

Ho Yin Kelvin, Lee - Curriculum Vitae

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RESEARCH INTERESTS	Interdisciplinary research software development, Health informatics, Mobile health and wellness apps, Wearable devices, Meta-research on FAIR scholarly outputs and research reproducibility, (Open) Science policy		
EDUCATION	Bachelor of Science, Computing Science , Simon Fraser University		2021
HONOURS AND AWARDS	Dean's Honour Roll, Simon Fraser University First Place in FAS Competition, Simon Fraser University		2021 2019
ACADEMIC RESEARCH EXPERIENCE	Clinical Research Project Assistant - The Hospital for Sick Children (SickKids) Jan 2023 - Present Supervised by Dr. Samantha Stephens <ul style="list-style-type: none">Examined the association between high-level moderation to physical activities & social networking and less fatigue & depression among youth with multiple sclerosis, and assessed the technical considerations and practical applications of consumer-grade wearables (e.g., Fitbit, Apple Watch) in pediatric clinical trialsMigrated and modernized ATOMIC, a native iOS app originally built in Objective-C, by rebuilding it using Swift and SwiftUI to enhance maintainability, performance, and user experience; currently deployed to 100+ study participants across 5 research institutions, the app supports personalized health interventions and real-time activity tracking for youth with multiple sclerosisIntegrated wearable and health data sources into the app ecosystem using Apple CoreMotion, SensorKit, HealthKit, Firebase Realtime Database, and REDCap, enabling automated, real-time monitoring of physical activityArchitected and optimized a web-based data dashboard (Next.js, Python, Firebase Cloud Functions) to provide 25+ researchers and coaching staff with real-time visualizations, trend analysis, and participant monitoring tools to support clinical decision-making Undergraduate Research Assistant - Simon Fraser University Apr 2021 - Aug 2022 Supervised by Dr. Joanna Woo <ul style="list-style-type: none">Analyzed central mass density trends in galaxies undergoing quenching, identifying correlations with super-massive black hole masses and their influence on galaxy evolutionDeveloped and executed high-throughput HPC workflows on a SLURM-managed cluster to process and visualize large-scale (IllustrisTNG) simulations data using Python, Matplotlib, and Astropy, enabling efficient analysis of the compaction phase in late-stage galaxy evolutionLed science outreach initiatives, presenting findings to regional astronomy communities and academic audiences to promote public engagement in computational astrophysics		
ACADEMIC PROJECTS	Stable Matching Quantum Algorithm - Project Link May 2021 - Jul 2021 <ul style="list-style-type: none">Developed a quantum algorithm leveraging Grover's search to solve the stable matching problem with $O(n\sqrt{n})$ complexity, significantly outperforming the classical Gale-Shapley algorithm ($O(n^2)$)Designed and implemented search black boxes for all entities, optimizing quantum state representation and improving computational efficiencyEngineered a stability evaluation method to analyze all possible stable matches, achieving 75% accuracy on the Qiskit Aer quantum computing simulator Variable Star Photometry - Project Link Jan 2021 - Apr 2021 <ul style="list-style-type: none">Developed an observation proposal detailing optimal target selection and telescope usage time calculations, contributing to an article with methodology, results and visual data representationsProcessed and calibrated astronomical imaging data using Python and astrophysics libraries (e.g. SEP) to correct for atmospheric extinction and cosmic rays, improving data accuracyAnalyzed luminosity periodicity in variable stars by applying statistical and computational techniques, identifying patterns relevant to astrophysical research		

PROFESSIONAL EXPERIENCE	Programmer/Analyst, The Hospital for Sick Children (SickKids)	Sept 2025 - Present
	Research Software Developer, McMaster University	Feb 2022 - Present
	Software Developer, NETGEAR	Sept 2019 - Apr 2020
	Certification Engineer (Co-op), NETGEAR	Jan 2019 - Aug 2019
GOVERNANCE & OVERSIGHT COMMITTEES	Mar 2025 - Present: Evaluation and Reports Committee Member Canadian Science Policy Centre	
	Feb 2025 - Present: Grant Writing and Research Committee Member Canadian Science Policy Centre	
	Nov 2024 - Present: Actionable FAIR Research Software Guidelines Task Force Research Software Alliance	
PROFESSIONAL TRAININGS	TCPS 2: CORE-2022 (Course on Research Ethics), Panel on Research Ethics	
	Issued Dec 2023.	
	Canada GCP - Research Coordinator/Assistant 1, Collaborative Institutional Training Initiative	
	Issued Dec 2023. Expires Dec 2026.	