David Tran

Research Statement

My broad research interest revolves around pushing the boundaries of what can be practically computed.

I am entering the final year of my Bachelor's with a dual in Honors Computer Science and a Major in Mathematics and currently hold the highest standing in the Department of Computer Science. I have experience in machine learning and computational neuroscience research: I was an undergraduate researcher at Western's Brain and Mind Institute under the supervision of Dr. Jörn Diedrichsen with funding from NSERC's USRA. We developed a novel architecture for generating functional parcellations of the cerebellum using fMRI data, which involved conducting research in problems related to Bayesian unsupervised learning, approximate infererence, and hidden Markov models. Currently, I am a part of my department's Quantum Computing Research Group, and am conducting research in quantum information theory, in particular in quantum error-correcting codes.

Apart from research, I also have professional experience in software engineering. Most recently, I was a software engineer in Silicon Valley at Snowflake, a software company specializing in high-performing and highly-scalable distributed computing. Even as an engineer, my interests lean toward research work: at Snowflake the body of my work was mainly exploratory and experimental, involving the discovery of optimizations for the perfomance and sources of pessimizations of the execution platform.

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