Statement of Purpose

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My research interest lies in business school. Building on a strong background from my undergraduate research in this field and the related field of business school, I am applying to PhD in Boston University to conduct research with the top experts in this field.

Research in Quantum Information. The two years of experience in modelling nanoscale light-matter interactions led me naturally to the booming field of quantum information processing. I was fascinated by the potentials of a powerful quantum computer built from light-matter interactions between microwave photons and superconducting circuits. So in the summer of my third year, I shifted focus and joined Prof. XXX's XXX group at Univeristé de Sherbrooke. With an Institut Quantique Fellowship, I undertook a new project on improving the resonance-induced phase gate with our experimental collaborators at the Engineering Quantum Systems group at MIT. It was an extremely enriching experience to join a starting project and be able to develop the full spectrum of skills in designing superconducting circuits, making and validating approximations, modelling interactions, and optimizing device parameters. By the end of the summer, I was fluent in basic Quantum Electrodynamics, the various phase space methods, analytics with Mathematica, and numerics with QuTiP. Armed with these research tools.I dedicated my senior undergraduate thesis to developing a new scheme for non- adiabatic holonomic gates with transmons, with experimental collaborators at ETH Zürich and continued supervision from Prof. XXX.

Boston University is a top destination for my graduate research because of its strong expertise in quantum information processing. I have experienced the proficiency of the researchers here first-hand when collaborating with Prof. William Oliver and the Engineering Quantum Systems group. In addition, the classic textbook Quantum Computation and Quantum Information by Prof. Isaac Chuang was the most useful reference throughout my undergrad research in the field. Overall, My research interests aligns very well with that of Prof. Oliver, Prof. Chuang, and Prof. O'Brien.

I am determined to pursue a research career in quantum information processing, with the goal of applying for permanent positions in academic or industrial labs. This is a truly exciting time for the field, as increasing government and industrial investments are expected to accelerate breakthroughs. If I am given this extraordinary opportunity, I hope to leverage the expertise and resources at Boston University to contribute to world-class research and successfully launch my own research career.

Finally, for the committee and faculty: Thank you very much for your time and consideration, I look forward to hearing from you soon.