Statement of Research Interest

My name is Kuanghua Qiao. My main research interest is embedded hardware/software and low power mixed-signal Integrated Circuit Design. I am writing to express my interest in pursuing the MASc at Department of Electrical Engineering & Computer Science of York University. I am excited by the prospect of performing research and broadening my knowledge of Integrated Circuit design, and I believe I would make an excellent master candidate. Professor Ghafar-Zadeh and I have discussed about the available master position in BioSA research group. As he found me a qualified candidate for this position, supporting my application, he has agreed to be my master supervisor should I be accepted.

I am passionate about embedded system and Integrated circuit design. During my time as an undergraduate student I have been working in BioSA laboratory under professor Ghafar-Zadeh’s supervision for 2 semesters. For my first project I participated in the *Age-Related Macular Degeneration Diagnostic Tool: Hardware and Software Development.* In this project, I developed a wireless input apparatus that can capture hand gestures. The resulting device can recognize two distinct hand gestures made in real-time with an accuracy of 82%. The second project I is *A Non-Invasive Wireless Respiratory Monitoring System for Animals.* In this project, I Designed a biomedical device to noninvasively monitor a dog’s breath rate with 99.7% accuracy using a piece of conductive fabric and wireless technology to remotely monitor breath rate in an undisturbed environment. The research was showcased in Lassonde Undergraduate Research Conference 2018. Finally, I participated the *Core-CBCM CMOS Capacitive Sensors for Life Science Applications* project. In this project, I built a test platform for the capacitive sensor designed by another PhD student. The test platform includes a PCB interface, a microcontroller that generate the test signal and a python test script that has a GUI.