Kuanghua Qiao

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June 19, 2018

Aileen Lamb

Wolf Advanced Technology

Stouffville, ON

Re: Electronics Technologist/Electronics Engineer
Greetings Mrs. Lamb：

I am writing to reply to this Electronics Technologist/Electronics Engineer position that I found on your career website. I am an Electrical Engineering graduate from York University, who enjoys solving challenges and tinkering electronics. Seeing the job description, I consider myself to be a strong candidate for this position.

As a research assistant in a bio-medical sensor lab, my projects always require generating test input and output signals by programming microcontroller for a target sensor. The microcontroller I have worked on include 32u4, ESP32, and SAM3X. On the other side, I also create GUI test applications that are easy to use and highly efficient when combined with diagnostics instruments such as digital multimeters, oscilloscopes, function generators, and VNAs. Through my PCB interface design task in the Core-CBCM CMOS Capacitive Sensors project, I can fluently utilize PCB design software such as Altium Designer and KiCad; Hand soldering with a soldering iron as well as a hot air station is another skill I gained through practice. The board I designed can be seen on my LinkedIn profile. My education grants me an even broader skill set include Cadence, Verilog, and Linux development environment.

Enclosed you will find my resume, which further details my skills, experience, and qualifications. I look forward to further discussing with you how I can contribute to the goals of your organization. Please contact me at your earliest convenience via email or by phone.

Yours sincerely,

Kuanghua Qiao

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Objective

- I am an electrical engineering graduate who's passionate about the electronics industry. I strive for excellence in my work and enjoy solving new and interesting technical problems. Presently, I am looking for an entry-level job.

Education

- B.Eng. Spec. Hons. Electrical Engineering | Feb 2019 | York University

Skills and qualifications

SOFTWARE LANGUAGES AND TOOLS

- *Java, Javascript, C, C#, Python, MIPS assembly, Shell script, MATLAB, LabView*
- *Linux, Git, Sublime Text, Eclipse, Visual Studio Code, Atmel studio, uVision, .NET Core, PyQt GUI, Altium Designer, Kicad, Cadence, NX, Solidworks*

HARDWARE SKILLS AND TOOLS

- *FPGA, Verilog, Microcontroller programming, I2C, SPI, UART, BLE, Wifi*
- *Embedded hardware design, Power Electronics, PCB layout design, BOM management*
- *SMT soldering, Hot air rework, Wire bonding, Electroplating*
- *Multimeter, Oscilloscopes, Function generator, Logic analyzer, Network analyzer*

Work Experiences

RESEARCH ASSISTANT | BIOSA LAB YORK UNIVERSITY | 2018-PRESENT

- **Project 1: Age-Related Macular Degeneration Diagnostic Tool: Hardware and Software Development.**
  - Brought up an input subsystem for capturing small hand movement gestures within a series of research experiments, to facilitate the user input during experiments.
  - Integrated accelerometers and flex sensors with the microcontroller to enable the gesture recognition functionality that can recognize two distinct hand gestures made in real-time with an accuracy of 82%.
  - Project research paper accepted by 61st IEEE International Midwest Symposium on Circuits and Systems conference.

- **Project 2: A Non-Invasive Wireless Respiratory Monitoring System for Animals.**
  - 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.

- Integrated stretch sensor with a MatLab peak counting function to enable the breath rate monitoring functionality.
- The research was showcased in Lassonde Undergraduate Research Conference 2018.

· **Project 3: Core-CBCM CMOS Capacitive Sensors for Life Science Applications.**
- Built out a test platform on top of a custom-designed CMOS integrated circuit to characterize the behavior of a capacitive biosensor.
- Designed, ordered, assembled a PCB to enable the interfacing of the custom CMOS with our embedded system.
- Programmed an embedded system to generate input and output which facilitated the analysis and characterization of the target sensor.

Volunteer Experiences

ELECTRICAL SUBSYSTEM DESIGNER | YORK UNIVERSITY SPACE ENGINEERING NANOSATELLITE DEMONSTRATION GROUP | 2015-2016

· Conducted battery qualification test which identified a selection of space-qualified batteries from numerous products on the market.

ELECTRICAL TEAM LEAD | LASSAT CSDC YORKU TEAM (CANADIAN SATELLITE DESIGN CHALLENGE) | 2016-PRESENT

https://github.com/okyx10a/CSDC-electrical/tree/Working-branch

· Implemented the solar panels system which enabled the satellite to sustain itself in orbit, which generates 6W of power per orbit under simulation.
· Programmed the power system micro-controller to monitor live behavior feeds and enable power system fail-safes during a live deployment.
· Prepared tutorials and documentation that record current progress and future plans to support new members.

Achievements

· The Gordon and Agnes (Twambley) Brash Award in Eng York — Nov 2015, Nov 2014
· University Continuing Student Scholarship — Aug 2014