Natalie Smith | Engineer

2446 Sinclair Rd – Victoria BC – V8N 1B3
☎ +1 (250) 216 8268 • ✉ smithnm@uvic.ca • www.nataliesmith.ca

Key Competencies

- Hands on experience modern development tools and technologies
- Full-stack development
- Ability to integrate hardware and software components in mechatronics systems
- Experience writing test plans, creating test cases and writing functional unit tests
- Ability to work effectively within a team setting while also being a motivated, proactive and self-starting independent worker
- Possess willingness and work ethic to learn new technologies and skills
- Extensive experience with customer service and practical problem-solving as well as exceptional written and verbal communication skills

Technical Skills

- HTML5/CSS3
- Angular 2
- Ruby on Rails
- C/C++
- C#/.NET
- Microcontrollers
- Javascript/jQuery
- Unit Testing
- JSON/XML
- Image Processing
- Sensor Integration
- Control Systems

Education

University of Victoria **Victoria BC**
B.Eng, Biomedical Engineering *2011–2016*
Specialization in Mechatronics

Experience

University of Victoria **Victoria BC**
Undergraduate Researcher *May–Aug 2015*
Worked in the Crystal Growth Laboratory designing a new control system for a 30 zone crystal growth furnace.

- Ran experiments on the crystal growth furnace including material preparation, furnace loading, and sample testing using a Scanning Electron Microscope
- Designed an implemented a fuzzy PID control system in LabView with adaptive control for the crystal growth furnace

University of Victoria **Victoria BC**
Undergraduate Researcher *Sept–Dec 2013*

Worked in the Biomedical Design and Systems Laboratory developing a medical phantom for use in testing and calibrating an ultrasound-controlled hand prosthesis.

- Designed and developed a medical phantom representing the ultrasonic properties of the tendon-hand system
- Tested prototypes and determined ultrasonic properties of materials
- Used an Ultrasonix ultrasound machine and MatLab to capture video and images of phantom prototypes

Island Health **Victoria BC**

Clinical Engineering Co-op *Jan–Apr 2013*

Worked in the Biomedical Engineering department of Island Health to assist in tasks such as device procurement and installation, cost analysis, preventative maintenance, and consulting with medical professionals.

- Assisted in medical device procurement and installation in hospital settings
- Performed cost analysis for major contract renewals
- Performed preventative maintenance on medical devices such as infusion pumps, defibrillators, and AEDs
- Consulted with medical professionals within multiple health networks across Canada in preparation for a networked fetal monitoring system

Saanich Commonwealth Place **Victoria BC**

Team Leader, Facility Attendant *2011–Present*

Work in supervisory roles as a Team Leader and Facility Attendant to oversee multiple staff and ensure that programs are running safely and effectively.

- Team Leader: Directly supervise a team of lifeguards to ensure safe pool coverage, oversee first aid situations, mediate public relations situations and provide excellent internal and external customer service
- Facility Attendant: Responsible for overseeing all facility programs, coordinating and providing back-up for all staff and conducting emergency procedures in case of emergencies

Technical Projects

Web Development: Developed multiple full stack web applications in both Ruby on Rails and Angular2. Portfolio available upon request.

Mechatronics: Designed the firmware to accomplish a conveyor belt sorting task

- Integrated multiple sensors, actuators and motors with a microcontroller programmed in C

Engineering Design: In a team of students, designed and developed a device to mimic the breathing action of human lungs

- Integrated multiple sensors and a linear actuator using a microcontroller to produce the mechanical breathing action of the device and to monitor several environmental conditions of the device such as humidity, C02 content, and temperature

Neural Networks: Designed a neural network to classify data instances in an online breast cancer database as malignant or benign

- Used MatLab to implement a three-layer feedforward neural network to automatically classify instances of breast cancer malignancy

Biomedical Image Processing: Solved task of retinal vessel segmentation in retinal images by using MatLab to implement adaptive local thresholding by multithreshold probing