Dianna Borinaga

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EDUCATION

University of Victoria   Victoria, BC

B.Sc. in Computer Science with Software Engineering Option   *Sept. 2016 – Sept. 2021*

- **Relevant Coursework**: Operating Systems, Data Structures and Algorithms, Database Systems, Software Systems Scalability, Software Testing, Object Oriented Software Design, Information Security and Privacy, Security Engineering, Analysis of Algorithms, Music Information Retrieval Systems, Machine Learning, Computer Networks

- **Activities and Societies**: Women in Engineering and Computer Science (WECS), Leadership Through Diversity in Engineering (LTD), UVic Virtual Club

PROGRAMMING SKILLS

- **Languages**: Bash, Python, Javascript, C, SQL, Java
- **Frameworks and Technologies**: Git, Docker, Django, Play, React, Redis, JUnit, Thingsboard IoT, SMD Soldering, Microsoft Suite, Visual Studio and JetBrains IDE's

EXPERIENCE

- **Aurora Industrial Machines**   Richmond, BC

  Embedded Systems Engineering Intern   *Dec 2019 - Present*

  - **Research and Development**: Developed multi-threaded embedded IoT systems on supported micro-controllers using ***Docker, MicroPython*** and the ***MQTT*** Protocol to enable wireless systems monitoring, analysis and control through a ***ThingsBoard*** IoT visualization dashboard.
  - **Maintenance and Testing**: Developed test scripts using ***Selenium WebDriver, Python,*** and ***Bash*** to verify new functionality.
  - **Hardware Design**: Gained experience with SMD soldering, 3D printing, PCB trace testing and logic as well as general power electronics systems testing, development and design.

  Software Developer Coop   *Sept 2019 - Dec 2019*

  - **Systems Analysis**: Developed an automated debugging and testing system to analyze system failures during peak-loads of a high power electric motor.
  - **Algorithms for Automatic Ramping**: Worked on developing and improving algorithms to detect boot faults and automatically ramp up motors to set speeds. Algorithms part of an embedded system built using ***Python***.
  - **Refactoring and Optimization**: Optimized internal monitoring infrastructure by eliminating redundancies in cross-functional libraries.

- **StudentWorks Painting**   Abbotsford, BC

  Franchisee   *Sept 2016 - Sept 2017*

  - **Operations Management**: Operated a small painting business highlighting administrative skills such as handling transactions, financial records, designing marketing plans, performing estimates, and booking jobs. Maintained organized procedures through ***Microsoft Suite***.
  - **Leadership**: Executed recruitment and management of employees by fostering an open and diverse environment. Maintained crew morale through incentives and attentive coaching.

PROJECTS

- **Day-Trading Distributed System**: Designed and implemented an online day-trading website to demonstrate software scalability techniques for up to 1500 concurrent users. The distributed backend was powered by ***Python, Docker Swarm, Redis, Django, Gunicorn*** and ***Nginx***. Used the ***Django REST Framework*** to develop the API and ***Djongo Engine*** to map SQL queries into a NoSQL ***MongoDB*** sharded cluster.
- **Whale Watchers**: Developed a CRUD web application hosted on Heroku to support whale observations using the ***Play Framework, JUnit, HTML*** and ***CSS***.
- **Music to Image Generation**: Collaborated with a research team to develop a ***Python*** program that automatically generates images from music data. Used STFT, DCGAN, CNN, and LSTM as a neural network pipeline to learn correlations between genres of music and categorical images. Leveraged pre-processing techniques and dimensionality reduction algorithms such as tSNE to correctly train models.