

Dianna Borinaga

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EDUCATION

University of Victoria

B.Sc. in Computer Science with Software Engineering Option

Victoria, B.C.

Sept. 2016 – Apr. 2022

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

TECHNICAL SKILLS

Programming: Python, Java, C, Bash, SQL

Web Development: Django, HTML, CSS, JavaScript, React, Play

Databases: MongoDB, PostgreSQL, Redis

Testing: JUnit, Mockito, Selenium

Tools: Git, Visual Studio, IntelliJ, Docker, Gunicorn, Nginx, Wireshark, Heroku

EXPERIENCE

Aurora Industrial Machines

Embedded Systems Engineering Intern

Richmond, B.C.

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 of a high power electric motor through a ThingsBoard IoT visualization dashboard.
- **Maintenance and Testing:** Developed test scripts using Selenium WebDriver, Python, and Bash to verify new functionality.
- **Hardware Architecture:** Gained experience with SMD soldering, 3D printing, PCB trace testing and logic as well as general power electronics systems testing, development and design.

Software Engineering Intern

Sept. 2019 – Dec. 2019

- **Systems Analysis:** Developed an automated testing system to analyze system failures during peak-loads of a high power electric motor. Monitored and analyzed network traffic using Wireshark.
- **Algorithm Design:** Developed algorithms in Python for embedded systems to detect motor boot faults and automatically ramp up motors to set speeds.
- **Refactoring and Optimization:** Optimized internal monitoring infrastructure by eliminating redundancies in cross-functional libraries in Python.

PROJECTS

Day-Trading Distributed System

Jan. 2021 – Apr. 2021

- Designed and implemented an online day-trading website to demonstrate software scalability techniques powered by Python, Redis, Django, Gunicorn and Nginx packaged up in Docker containers. Used the Django REST Framework to develop a REST API, Django Engine to map SQL queries into a NoSQL MongoDB sharded cluster and Docker Swarm for container orchestration.

Whale Watchers

Sept. 2020 – Dec. 2020

- Developed a CRUD web application hosted on Heroku to support whale observations using the Play Framework, HTML and CSS. Used JUnit and Mockito to test the system.

Music to Image Generation

Sept. 2020 – Dec. 2020

- 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 such as MFCC's and dimensionality reduction algorithms such as tSNE to correctly train models.

REFERENCES

Available on request.