

Billy Fung

CONTACT billy@billyfung.com

EDUCATION **University of British Columbia**, Vancouver, BC, Canada **2015**
B.A.Sc. Engineering Physics, Mechatronics specialization

SKILLS Python, Javascript, R, PostgreSQL, Docker, Ansible, AWS, GCP, GAMS

EXPERIENCE **Software Consultant**, Worldwide.

February 2016 to Present

- specialising in backend software development, assisting clients to build up data-driven web applications
- building and supporting Python based web services for a peer to peer electricity retailer
- developing trading and data analytics platform for wholesale electricity trading
- using machine learning to build predictive models around electricity demand and consumption
- managing and maintaining cloud based servers, namely within AWS and GCP
- design, implementation, and deployment of mathematical optimisation models

DVE Technologies, Vancouver, Canada.

Lead Engineer / Cofounder

December 2014 to November 2015

- created and developed the company website, along with maintaining the cloud systems
- developed and tested electrical circuits for the prototype device
- aided in refining and optimising of software algorithms to fine tune head tilt gesture detection
- used Solidworks to design the physical enclosure for 3d printing and for plastic injection mold

Blackberry Limited, Ontario, Canada.

Reliability Systems Development Intern

May 2011 to August 2012

- developed and maintained test stations for testing handheld devices involving highly accelerated lifecycle testing and failure mode analysis
- debugged board level electrical errors along with identifying hardware troubleshooting
- performed electrical and mechanical testing of all components within mobile device and was involved in troubleshooting and reporting the results
- qualified supplier manufacturing sites through statistical analysis

PROJECTS

- [coffee information website](#)
- [automatic wireless irrigation system](#) based on moisture sensor readings
- [autonomous tape following race car](#)
- [automated bicycle turn signal and brake light system](#)

Database

- extensive experience in scraping data from websites and parsing the data to be stored within a SQL or noSQL database
- design and maintaining of PostgreSQL databases, including optimisation and administration roles
- very comfortable using raw SQL to query data, or using an ORM wrapper
- involved with database design using event triggers, jsonb datatypes, GIN indexing, materialized views, upserting and foreign data wrappers

Web Applications

Backend

- built multiple web applications using the Flask framework, along with appropriate framework extensions mainly for internal admin usage
- packages often used are SQLAlchemy, pytest, gunicorn, flask-admin, WTForms
- familiarity with a more full featured framework as well, having used Django to build a podcast hosting web application
- spent time building REST APIs to serve to frontend frameworks to display visualisations like customised internal analytics dashboard and reporting
- test driven development in practice whenever feasible, which isn't always the case
- data warehousing from multiple feeds, with experience using pandas and numpy to manipulate data

Frontend

- interactive visualisations using d3.js, customised to the user's liking through javascript functions
- familiarity with manipulating HTML and CSS elements without having to use a library
- aided in development of a React.js web application to handle customer sign ups and display tailored usage charts
- very comfortable with using jQuery libraries and navigating DOM elements
- dabbled in user experience design and page layouts

Devops

- maintaining CI/CD pipeline to ensure sane and reproducible work, through Chef and Jenkins
- usage of Docker and containerized systems to keep infrastructure abstracted properly
- set up of HTTP networking and security through nginx
- experience with cloud/IaaS, namely AWS, Google Cloud, Digital Ocean, and Heroku
- build, automate, update and maintain infrastructure e.g. databases, redis, internal services, etc

Data science

- experienced in designing business driven data science platforms and applied AI solutions
- able to design experiments and conduct validation on hypothesis through optimisation of metrics
- developed predictive and explanatory models and machine learning algorithms to predict electricity demand and forecast consumption
- analysed data from various sources and propose insights and correlations that can be derived from the data
- always up to date with the most recent developments in machine learning by constantly reading papers and trying new algorithms