

Sarina McFarland

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I was bitten by the programming bug as a young teenager and have been programming and learning ever since

Skills & Abilities

PROGRAMMING LANGUAGES & TECHNOLOGIES

Strongest With:

- Python (6 years)
- JavaScript/Node.js (5 years)
- C/C++ (12 years)
- Linux/Unix (12 years)
- Windows (10 years)
- TCP/IP, UDP (4 years)
- Serial/Radio (>7 years)

Competent With:

- Rust (2 years)
- Java (6 years)
- PHP/HTML (6 years)
- MySQL (6 years)
- Assembly (5 years)
- Arduino (5 years)
- Perl (10 years)

Familiar With:

- Scheme (2 years)
- Clojure (1 year)
- Ocaml (<1 year)
- Go (<1 year)
- Android (1 year)

* years of use refer mainly to personal projects, but also includes paid work

PROJECTS

- **Molten:** an ML-based, type-inferred language/compiler written in Rust
- **WebMUSH:** a web-based interactive social/game engine using Node.js/Express
- **A Bugs Life:** a simple artificial life simulator written in Rust
- **Nerve Control System:** a web-based home automation system written in Python
- **DeskClock:** a desk companion device using an Arduino (originally using a PIC microcontroller)
- **Logarithm:** a helpful Internet Relay Chat (IRC) bot written in Perl
- **SDRL:** an embeddable Scheme-like language interpreter written in C
- **Stutter:** an IRC client written in C

All code can be found at <http://jabberwocky.ca/gitweb> as well as on github at <https://github.com/transistorfet/>

Experience

INTERMEDIATE WEB DEVELOPER | BANANATAG SYSTEMS | MAY 2018 - PRESENT

- Designed and implemented an append only data store and event tracking system, as part of a multidisciplinary team, to enable customers to import employee contact data from external sources such as Azure Active Directory, to build mailing lists, and to track email statistics, using MySQL, SQS, Node.js, React, and Redux
- Developed and lead a series of workshops with the engineering team on compilers and interpreters as part of the company's continued learning program

SENIOR PYTHON PROGRAMMER | OPENBROADCASTER INC | FEBRUARY 2016 – APRIL 2018

- Solely responsible for development of the software component that automates broadcast radio and television stations. Together with a media server, it provides remote communities the ability to run a licenced radio or TV station on a budget. During my tenure, I extended it to allow a radio DJ to conduct a show live through a web interface, tied it into the emergency alerting system in Canada, and added support for streaming from live concerts, using Python, Gstreamer, and Icecast
- <http://github.com/openbroadcaster/obplayer> (open source)

FREELANCE PROGRAMMER | APRIL 2013 – FEBRUARY 2016

- Coordinated with web designers to produce functional business websites
- Added support for the national emergency alert system to OpenBroadcaster

ELECTRICAL DESIGNER/PROGRAMMER | WATANABE ENGINEERING LTD | JANUARY 2006 – APRIL 2013

- Designed, programmed, tested, and commissioned fault-tolerant water/sewage pumping station, and streetlight systems. Deliverables to various municipalities and authorities around BC included detailed AutoCAD drawings, Programmable Logic Controller (PLC) and Human Machine Interface (HMI) source code, parts specifications, installation instructions, testing services, and support, for sites such as:
 1. Britannia Beach Water Treatment Plant near Squamish
 2. Esowista Water Booster Station near Tofino
 3. No. 4 Road Drainage Pump Station in Richmond

COMPUTER TECHNICIAN | WATANABE ENGINEERING LTD | AUGUST 2001 – DECEMBER 2005

- Purchased, installed and configured office computer equipment
- Installed and maintained a small-scale PBX telephone system.
- Troubleshooting of desktop computer and network issues

Education

BACHELOR OF SCIENCE | MAY 2006 | UNIVERSITY OF BRITISH COLUMBIA

- Major: Computer Science
- Featured Projects:
 1. Implemented a general-purpose RPC-like communications library in Java.
 2. Extended a Java compiler to include aspect-oriented language features.