

# GEOFF HOLDEN

**FULL STACK SOFTWARE AND ELECTRONICS DEVELOPER**

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## Summary

I'm a software developer with 15+ years of experience designing and writing code covering large scale object oriented designs all the way down to tiny microcontrollers.

## Skills

### Development

I design and develop software for platforms of all sizes, including microcontrollers, embedded Linux, mobile devices, desktop computers, and distributed systems.

### Operations

My background in system administration and operations gives me valuable perspectives on designing for deployment, configuration management and scalability.

### Problem Solving

My natural tendency for problem solving and debugging assists with tracking down and rectifying issues in codebases and environments alike.

## Technical

C / C++

Python

Flutter

JavaScript / TypeScript

Microcontrollers

Java / Kotlin

Go

XHTML

Git / CVS / Subversion

Linux

Ruby (on Rails)

React

CSS

SQL / MySQL

Android

## Experience

### Wave

Software Engineer

St. John's, NL (Remote)  
2022-present

- Backend services in Python
- Integrations with 3rd party vendors

### Seaformatics Systems Inc. / WaterLily

Co-Founder / Director of R&D

St. John's, NL  
2016-2022

- Software development on embedded platforms.
- Circuit and PCB design and fabrication.
- Management and customization of Shopify theme

### Canadian Operational Network of Coupled Environmental Prediction Systems (CONCEPTS), Fisheries and Oceans Canada

Physical Scientist

St. John's, NL  
2016-2017

- Design and implementation of a web-based data visualization tool to process terabytes of model output and produce custom plots in real time. This involved writing a backend system in Python that leveraged NetCDF data files, as well as a JavaScript frontend using ReactJS.

# SEAformatics Group, Memorial University of Newfoundland

## Research and Project Engineer

St. John's, NL  
2010–2016

- Design and development of a power-efficient stack of microcontrollers to perform data acquisition, communications, and battery charging in a subsea environment.
- Development of a web-based data visualization application in Ruby on Rails.
- Deployment and testing of sub-sea acoustic modems.
- Software development on embedded Linux, Arduino, and Ruby on Rails.
- Investigation of sub-sea networking algorithms.
- Circuit and PCB design and fabrication.

## Progress Software

### Software Engineer

St. John's, NL  
2007–2009

- Created a Requirement Traceability Matrix web application using Ruby on Rails
- Wrote a set of user interface guidelines to help avoid common mistakes, and increase inter-product consistency
- Fixed bugs and created demos for Apache ActiveMQ
- Bug fixing and feature development for Artix Data Services
- Produced and managed patches for the Artix product
- Bug fixing and new feature development for SonicMQ

## Google Inc.

### Site Reliability Engineer

Mountain View, CA  
2006–2007

- Automation of tasks through the development of scripts and administration tools.
- Configuration of system and network parameters.
- Monitoring of system stability and performance.
- Ensuring 24×7 operation of cluster.
- Comprehensive documentation of procedures.

## Verafin Inc.

### System Architect

St. John's, NL  
2004–2005

- Software design and development.
- Researching and implementing new technology.
- Responsible for the architecture and design of the technical environments (servers, storage, database, middleware, software, network and desktop) for the various developed and integrated applications.
- Responsible for the management of the network, servers, and workstations.

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## Personal Projects

### Android Apps

Developed and launched two apps on Google's Play store

- Food Diary – a food tracking app with a 4.2 star rating and over 10,000 installs.
- Two Do – a different take on a To Do app, recently launched.

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## Education

### Bachelor of Engineering in Computer Engineering

Memorial University of Newfoundland

St. John's, NL  
1998–2004

Memorial's computer engineering program covers a wide breadth of topics, such as software development, analog and digital circuits, microprocessors, signal processing, telecommunications, and instrumentation and controls. It is also a co-operative education program that included six separate four month work terms in the industry.

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## Publications

- Cook, A., Masek, V., Press, A., **Holden, G.**, Boyd, R. "The Seaformatics Technology Demonstration Project", *OCEANS '14 MTS/IEEE*
- **Holden, G.**, Cook, A., Masek, V. "Development of an Energy-Based Routing Protocol for Underwater Networks", *21st Annual Newfoundland Electrical and Computer Engineering Conference (NECEC 2012)*

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## Volunteer IEEE

- IEEE Newfoundland and Labrador Section
    - Served in a number of roles from 2008–2019, including treasurer, secretary, membership development chair, and webmaster.
  - Treasurer – 14th Canadian Workshop on Information Theory (CWIT 2015)
  - Publications Chair – 22nd Canadian Conference on Electrical and Computer Engineering (CCECE09)
    - Verified that all the papers were formatted correctly for publication, and worked with the authors to fix any issues.
    - Compiled the papers for both the print and electronic proceedings.
    - Sourced USB keys for electronic proceedings and did the logo design to be printed on the keys.
    - Designed and implemented a web-based layout for the electronic proceedings on USB key.
    - Submitted the papers to be included in IEEE Xplore.
  - Publications Committee Member – 17th International Engineering Management Conference (IEMC2005)
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