



# JONATHAN VANDAMME

## SOFTWARE ENGINEER

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North Vancouver

Experience in Full-Stack web development, embedded systems engineering, research and project management. Dedicated, enthusiastic team player committed to efficiently resolving project issues and willing to take ownership of core components.

## WORK EXPERIENCE

**Full-Stack Web Developer Consultant, CGI** Oct. 2017 - Jun. 2019

**Angular Developer, UX Expert and Analyst** for Hydro-Québec

Development of a UI component library in Angular2.

- Designed and documented easy-to-use and intuitive APIs for each UI component.
- Validated the UX and component interfaces with the client.
- Supported the team during the development and testing with **Angular6** and **Jest**.
- Integrated the component library into the client codebase.

**Full-Stack TypeScript/Angular Developer** for the World Anti-Doping Agency

- Architected and scaffolded a scalable, internationalized **Angular6** application.
- Helped scaffold the REST API using **NodeJS, Express and TypeScript**.
- Wrote REST API tests using **JavaScript, Mocha and Chai**.
- Took the initiative to develop a **JavaScript library** that automated the generation of SQL to setup our tests.
- Participated in the Backend and Frontend deployment on production servers.

**Electrical/Software Engineer, Sherbrooke University** Nov. 2015 - Apr. 2017

The Inolivent Laboratory develops a medical device to induce ultra-fast therapeutic hypothermia using total liquid ventilation.

- Designed a distributed, safety-critical control system in C++.
- Designed a touch user interface in C++/OpenGL using the ImGui pattern.
- Designed custom printed circuit boards with redundant ARM microcontrollers.
- Documented the processes according to the medical standards (IEC 62304).
- Developed algorithms to monitor the elasticity of the lungs in real-time.
- Participated in the creation of the **Orixha medical startup**.
- Coinventor for a pending **International Patent Family Application**.

## INTERNSHIPS

**Software Developer, Sherbrooke University** Sept. - Dec. 2010 & May - Aug. 2011

Developed a data-driven touch interface to control a medical ventilator using C#.

**Software Developer, CAE Inc** May - Aug. 2009 & Jan. - Apr 2010

Flight simulator and tools development using C++ and Python for the military and cockpit development departments.

## PERSONAL PROJECTS <https://github.com/jo-va>

**Evolving Creatures - Haskell application** 2019

Artificial world simulation using neural networks, genetic algorithms and functional programming techniques.

**GoTurtle - React-Native/Firebase mobile application for Relay For Life** 2018

A mobile application that tracks the distance covered by groups of participants during outdoors events, available on **Google PlayStore**.

**Hop - A global illumination rendering engine written in C++ and scripted in Lua** 2017

An interactive multithreaded and vectorized (SIMD) Monte-Carlo path-tracer for photorealistic image rendering on the CPU.

**YAK - A multiprocessor 64-bit kernel written in Assembly and C** 2015

A small operating system with a high resolution terminal that boots from a USB stick.

## TECHNOLOGIES

### Frontend

- JavaScript (ES6+)
- TypeScript
- Angular2+
- React, React-Native
- NGRX, Redux
- RxJS
- HTML, CSS, SCSS

### Backend

- NodeJS, Express
- Firebase
- Java, C/C++
- Haskell, Python
- REST & GraphQL APIs
- MySQL
- MongoDB, RethinkDB

### Package Managers / Bundlers

- NPM, Yarn
- Webpack

### Testing frameworks

- Jest
- Mocha, Chai

### Containers / Cloud

- Docker
- Kubernetes
- Google Cloud Platform

## EDUCATION

**Sherbrooke University** 2015

Master of Applied Science in Mechanical Engineering  
GPA: 4.05/4.3

**Sherbrooke University** 2011

Bachelor of Mechanical Engineering and Aeronautics  
GPA: 3.92/4.3

**Ultimate Courses** 2018

Angular/TypeScript certification

## DISTINCTIONS

- Co-author of 7 scientific publications
- Lecturer in international conferences
- 5 graduate scholarships
- 3 Academic excellence awards
- International Patent Family application pending