



VINCENT VAN HAAFF

<https://vvh.io>

Skills Summary

I am a passionate polyglot technical creative, engineer, and co-founder with over 17 years of commercial experience and full-stack skills in the design, development and maintenance of modern, user centred tech driven products and services. I also create engaging experiences in software (web, mobile, new media, console) and embedded hardware systems. I have a strong interest in performance, engagement, HCI, and user centred design, and accomplishing it with a strong team. Language skills include and are not exclusive to: C, C++, Rust, Ruby, Golang, Javascript, node.js, Swift, and Python/TensorFlow. My most proficient skills are less categorically language specific and more include the diverse experience and wisdom experienced technical leadership can offer. Let's get coffee!

Experience

a flyingoctopus consulting

Creative Director/Co-founder | Nov 2010 - Present

Facilitated interactive new media productions & art installations for clients in both the public and private sector. Clients include the CBSA, Chipkin Automation Systems, The Vancouver Airport Authority, Emerson Connect, Hewlett Packard, MistyWest, Science World, O Reilly Media, Newland Systems, Vancouver Airport Authority, Farmer's Apprentice, Ubuntu Canteen

- Rapid computer vision development with C++/openFrameworks, python, p5/java, & Unity focused around biometrics and machine learning.
- Rapidly iterated hardware prototype firmwares using C for the atmega328, av32, and AMD chipset architectures. General focus on DSP, chaos engineering, and BTLE support.

- Guided multiple clients through a product and business development cycle. Consultation includes lean development with Scrum, Kanban, and other Agile methodologies. Helped with ideation and incubation of many kickstarters, business products, and services.
- Built technical and project management infrastructure for multiple dev teams to prep for expedited production release cycles and trained teams in proper version control, documentation, and iteration processes with succinct management Scientific Research and Experimental Development Tax Expenditure Claims as a key implementation goal.

Fluency Labs Inc.

Technical Lead | Oct 2018 - Oct 2019

Developed a distributed computing framework for supporting cloud-native applications and provided a decentralized feature set for developers. Created patented Atom node to combine leading strategies in edge computing to support practical and powerful micro-service building blocks for creating decentralized applications. Deployed and scaled Kafka/Zookeeper/Akka/Atom Kubernetes cluster to deploy a managed data broker for MQTT IoT stream data ingestion based on Cpp and Scala.

- Created a bare metal implementation of edge network computation solution leveraging proprietary company patents in Cpp.
- Wrote custom Cpp library for distributed Actor driven system for multi-agent systems using zeromq and Kafka
- Implemented a Scala, Java, Kafka, Zookeeper, Akka Kubernetes cluster meant for deployment on edge network devices
- Led the team towards a more Event-driven CQRS microservice cluster topology through prototypes and use cases.
- Mentored and trained a junior developer in Eventsourcing & Actor model programming using the Scala and the Akka framework.
- Created containerized stack for concurrent data-ingestion techniques for use in Smart City IoT MQTT data ingestion using Docker/Kafka/Zookeeper/Akka/Apache Spark/Kubernetes

Xeraflop Technologies Inc.

Senior Software Generalist | Apr 2017 - Jan 2018

Built full featured self-service and point-of-sale payment terminals that included biometric identity verification terminals and e-commerce software to allow users to perform electronic business transactions via a global computer network. Additional development included a governmental regulatory body provisioned seed-to-sale inventory tracking management software & a real-time map/delivery application for mobile and web.

- Built out and maintained features for a seed-to-sale inventory management service. Code stack was a monolithic single Ruby on Rails instance inherited from a previous development team and was very difficult to maintain.

- Spearheaded a migration to an Eventstore-centric CQRS microservices architecture written in Golang on a dockerized Kubernetes cluster, leveraging data metrics logged by Kibana & Elastic Search to optimize the cluster.
- Assisted in consulting the design of the front-end toolchain & which design patterns to adopt for a migration from Angular.js to node/React/Redux/Jasmine/Enzyme hosted in an Electron app on a tablet.
- Created prototype for a real-time, two way sharing-economy delivery mobile and web app at the request of the state of Washington. It was written in Cordova/React and Google Firebase.

Vancouver Airport Authority

Biometrics R&D Lead | Mar 2016 - Jul 2016

Incubated and built up team and processes for evaluating technical solutions for provisioning new IEC and NIST standards in iris biometrics; using advanced computer vision and lighting techniques for governmental port of entries in over 51 countries.

- Built up R&D lab/team to modernize automated border control kiosks around the world.
- Launched test pipeline policies & procedures required to meet new CBSA & CBP PIK requirements.
- Wrote automated test pipeline & toolchain for light sensor & lens performance (openCV2).
- Built scientific testing process for empirically evaluating optical system performance.

David Suzuki Foundation

Data Evangelist | Nov 2015 - Mar 2016

Responsible for data health and management, analytics, and business intelligence built on Salesforce.

- Integrated all SaaS products into Salesforce.
- Made data reporting tools for campaigns.
- Converted & migrated legacy data to a Salesforce database.
- Created a data-entry pipeline for volunteers & employees using the new force.com gui data mapper.

tzooa.com

Hardware/Data Consultant | Sept 2015 – Present

Created firmware and mobile app for hardware air quality tracker. Custom hardware design was based on the atmega328 chipset and a BTLE2.1. Consultation is currently ongoing, primarily during a large bluetooth spec update (at the time of writing this it is currently at BTLE5).

- Created communication protocol in BTLE2.1/BTLE3.
- Created boilerplate Android app.
- Tested hardware/software communication using bluetooth spoofing techniques using an atmega328-based RFduino.
- Created communication prototype for testing UX & firmware debugging.

rouxbe.com

Interim CTO | Sept 2014 – Sept 2015

Custom Content & Learning Management System for online culinary education built in Ruby on Rails & Node.

- Responsible for devops on Discrete VPS server architecture (Linode).
- Defined & implemented new features on a Ruby on Rails/web-socket stack to facilitate interactive video classrooms on the web.
- Monitored progress to shard normalized PostgreSQL database into a more distributed architecture.
- Prototyped migrating LMS client platform to Swift and Cordova.

Hybridity

Product Development Advisor | Jun 2014 – Sept 2015

Consulted and integrated multi-platform native mobile app (iOS/Android) with a community-persistence featured back-end for mobile app IP. Additional work spanned from installation-art technical direction to component testing focusing on Computer Vision and HCI.

- Designed & developed backend business logic layer in (objc, CoreData, & Parse).
- Created prototypes to evaluate GLSL shader performance on the iOS & Android platform.
- Implemented computer vision features using openFrameworks & objective-C.

crossfader.fm

Co-founder | Sept 2013 – Sept 2014

Co-founded and bootstrapped iOS music production software and community platform.

- Wrote mobile circular buffer for real-time DSP editing.
- Created track recommendation engine based on donated iTunes Match data using Bayesian networks (Hadoop/Ruby/Objc).
- Grew a student-teacher project into a 15 employee studio.
- Designed product around unique customer growth model to create a brand that spans multiple experience and engagement levels.

Graffiti Research Lab

Software Lead/Interaction Consultant | Aug 2013 – Aug 2014

Computer vision and interaction design of networked real-time projected graffiti for [PWN The Wall](#) installation at W2 Woodwards.

- Wrote Java server to handle communication of multiple instances of graffiti client.
- Wrote Java client to convert IR light blob detection into parsable udp packets (openCV2).
- Created GUI to render graffiti paths & various types of brush stroke styles.

Coverall Crew

Software Lead/Platform Specialist | Aug 2012 – Aug 2014

Technical Lead for the design and implementation of software architecture project roadmap based on Ruby on Rails & Backbone.js for the whitelabel online ticketing service [attendease.com](#) (currently used by both [Adobe Max](#) and [SXSW](#)).

- Created technical release cycle roadmap.
- Implemented full stack web product (Ruby on Rails 3/coffeescript/backbone.js/haml).
- Implemented database layer using non-relational database technology (mongoDB).

eatART Labs

Event/Installation Coordinator | Aug 2012 – Aug 2015

Created compelling, interactive three-dimensional art pieces for site-specific fund-raising events for eatART Labs.

- Wrote real-time GLSL graphics shaders that respond to various inputs such as sound & midi values.
- Built controller hardware designed specifically to control multiple host machines controlling up to 1024 lighting and projector channels.
- Created & developed brand styling for various event campaigns & fund raisers.

weelooms.com

Co-founder | Aug 2012 – Aug 2014

Designed tablet-dock/robot/conferencing assistant software and firmware.

- Bootstrapped tech team to develop a virtual assistant on the android tablet platform.
- Established robotic tablet dock hardware spec to outsource for rapid prototyping & fabrication.
- Prototyped the first pass at natural language processing using various C++ dsp libraries and python.
- Developed and maintained the virtual box instance of the entire deployment pipeline.

monome.org/aleph

Hardware/Firmware Designer | Aug 2012 – Present

Full stack designer/developer for digital music instruments and synthesizers. Key responsibilities involve PCB development, Interactive Coding Environment for Software Developer kit development, app module architecture & development in C. Embedded firmware programming for multi-architecture chipsets.

- Built initial PCB prototype for hardware interface using chemical-etching & GNUplot.
- Progressed application ecosystem by building basic generative interface applications on various development platforms (Max/MSP, Chuck, Processing, node.js, python, java).
- Firmware development for AVR32 based sound processor & DSP.
- Community management and admin of GitHub project to promote good code and a healthy open-source commit culture.

Eco-clix/Adrena LINE Zipline Adventure Tours @Sooke

Hardware/Software developer | Aug 2010 – June 2011

Kiosk & camera system designer. Camera challenges included solar powered charging w/ inverter, wireless transmission of photos via secure remote WiFi networks, automated photo capture system using pixel differentiation and thresholds to validate subject is in-frame. Kiosk challenges included touch-based hardware-platform software development, payment system, kiosk to email/social media publishing.

- Wrote Ruby on Rails web-based rich kiosk application for photo capture, purchase and sharing.
- Prototyped weatherproof camera, motion sensor, and wireless network to send photo to kiosk.

- Managed product requirements with client to build a robust and agile product release schedule.

Microsoft/BigPark

Senior Software Developer II | Aug 2008 – May 2011

User experience designer and software engineer for Xbox Kinect Incubation Team as well as Sound Designer for online gaming. Responsibilities involve User Experience prototyping for the Xbox Live platform using the new computer-vision hardware device as well as software development for internal Microsoft Kinect libraries for video game development.

- Developed prototypes & tech-demos for Incubation team (Flash/as3/javascript/cpp) for the xbox 360/kinect and web-based platforms.
- Front End development for free-to-play flash games using Flex/as3.
- Recorded and produced character and environmental sound effects and for free-to-play web tower defense game.
- Integrated social features with facebook app api & other platform specific requirements.

monome.org

Embedded Systems Programmer | Nov 2003 - Present

Original developer for USB to Serial firmware implementation for originally designed interface hardware.

- Wrote interaction software for music (MaxMSP/Java).
- Prototyped hardware in C/Arduino.
- Evaluated hardware components for use in production hardware.
- Coordinated marketing outreach to other artists to use hardware.

Acknowledgements & Affiliations

Vancouver Mini-Makerfaire Co-founder

Co-founder of annual family-friendly event showcasing Vancouver's Maker Movement (makerfaire.ca). From tech enthusiasts, metal artists, homesteaders, painters, potters, 3D printing enthusiasts, knitters, roboticists, Makerfaire.ca brings Vancouver's DIY enthusiasts under one roof.

Co-founder of Vancouver Hackspace

Co-founder of hackspace.ca, a physical space where people can gather to share ideas, equipment, opinions, and beer. Members work on personal projects, collaborate with others, and learn new skills. More than just a studio space, we focus on sharing all sorts of knowledge within a friendly and collaborative atmosphere.

Co-founder of Aurora Digitalis

Co-founder of Aurora Digitalis, a non-profit society that curates art shows, public art engagement as a collective cooperative for new media artists.