

# STACY GAUDREAU

SOFTWARE & SYSTEMS DEVELOPER

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## PROFESSIONAL STATEMENT

Self-starter driven to discover new abilities and technology. Founder of an electronic hardware company, autodidactic programmer and circuit designer. A decade combined expertise in low-level embedded systems, C++, test & measurement, Linux and Python. Extensive experience transforming product concepts into reality.

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## EDUCATION

### BSc Computer Science

University of London  
2019 – 2024 (October)

### Electrical & Computer Engineering

University of Manitoba  
2011 - 2013

## SKILLS OVERVIEW

C++, Python, JavaScript, Bash  
Low-level test and measurement  
Embedded systems (ARM devices)  
Computer networking & Linux systems  
Business & financial logic  
Virtualization & storage technologies  
Working understanding of accounting  
and financial instruments  
Database & web technologies  
Product design and UX  
Some FPGA/HDL experience

## EXPERIENCE

### Senior C++ Developer

Polyverse Music Inc. | 2022 - 2024

Cross-platform desktop GUI software development in C++

- Regular use of geometry and linear algebra to solve low-level vector graphics rendering problems
- Simulating ideas and systems using Python and other scripting tools
- Design and development of library methods to supplement our GUI framework
- Keeping up with modern C++ standards & best practices
- Use of multithreaded programming techniques
- Development of uncompromising UX and UI modelled around hardware interface concepts, for a demanding user base of customers

### Founder, Lead Developer

Hexinverter Électronique | 2011 – 2022

Invention, circuit design, development and manufacture of more than a dozen audio hardware products, including operational tasks

- Developed and shipped embedded systems in C and C++
  - Analog and digital circuit design and troubleshooting using SPICE simulation and analog prototyping techniques
  - Invented creative workflows and automation to solve challenging engineering problems
  - Leveraged software and scripting tools such as Python and its libraries to simulate systems and overcome design challenges
  - Managed sales, shipping and distribution to a worldwide network of boutique audio dealers. Everywhere from North America to Asia
  - Troubleshooted our way out of problems using a variety of test equipment oscilloscopes, logic analysers and signal generators
  - Worked closely with and managed a distributed team
  - Produced thorough technical documentation in the form of user manuals, product packaging, test and assembly procedures
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## CAREER MOTIVATION

Seeking to leverage a diverse background in hardware, software development and business logic toward a role which challenges and inspires me.

At present, finishing a BSc CS (part time, distance learning) in order to supplement a lifetime of self-learned experiences with more rigorous software theory.

## LANGUAGE PROFICIENCY

English - written and spoken.

## RECREATION

Motorcycles

Nature

Exercise & sports

Music production

## RECENT PROJECTS & LEARNING ACHIEVEMENTS

### Ray Painter

A raytracing 3D renderer written from scratch in C++

- Test-driven development used throughout the library
- Vector/matrix mathematics and raytracing engine written from scratch
- Multithreaded CPU/software rendering
- Ray Painter is the work-in-progress desktop GUI part of the application, designed to provide a convenient and intuitive editor for creating 3D artwork and prints with

### Rate My Derp!

A production-grade web application and deployment built using Python, Django, JavaScript and other web technologies. A learning exercise to further skills in software as well as deployment considerations in a Linux environment. Some highlights include

- Following industry best practices including test-driven development
- Integration of InfluxDB to provide a timeseries database and metrics dashboard for monitoring the deployment and application KPIs
- Using Celery to deliver periodic application measurements and statistics to the timeseries database

### Networking, Server & Compute Lab

Design and administration of a server cluster from used enterprise datacentre parts acquired through auction. For learning about networking, virtualisation, distributed and network storage technologies, with an emphasis on open-source technology. Provides a local software development and computing hardware environment including

- A multi-node Debian-based KVM hypervisor cluster
  - CentOS/RHEL and Ubuntu server VMs
  - Deployments of various open-source software including a modified ERP system which saved Hexinverter thousands of dollars a year
  - Monitoring and safe-shutdown automations
  - ZFS storage for redundant datastore and file backup targets
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