

PERSONNAL SUMMARY

Software developper in Embedded Systems and computer science specialized in Avionics.
Engineering degree complemented by a Master's in Computer Engineering with a focus on embedded systems and aeronautics.
Strong experience in embedded system development and integration of avionics interfaces and instruments.
Multiple assignments as a DevOps engineer and system administrator, as well as projects completed as an independent contractor.
Curious, determined, and endowed with a strong sense of initiative and analytical thinking, able to quickly adapt to new technical and operational environments.
Holder of a French private pilot license, a Canadian commercial airplane and helicopter pilot license, as well as SATP certification for advanced and complex operations.

SKILLS

Language:	C, C++, PHP, Python, Scheme, VHDL, Go, JAVA, .Net
System programming:	IPC, concurrent computing (Multi-threading, Multi-processing), embedded programming, drivers
Hardware:	FPGA, ARM, JTAG, A429, AFDX, CAN, SBC (Rasberry PI, Orange PI...), Arduino, Gyroscope, Accelerometer
Protocol:	Modbus, Zigbee, Bluetooth, I2C, SPI, SERIE
Linux:	Bash, Docker, Kernel, Drivers , Virtualization
Standard:	DO178 B/C, DO254, UML, Design Patterns
Aeronautics software:	FCC, TCAS, EGPWS, Weather Radar, PFD, SVS
Regulation:	Transport Canada (RAC), DGAC
Additional skill:	SysAdmin, Devops, AI, WEB, Security

FLIGHT TIME

Fixed wing					
Total	448	PIC	170	Night	53
Cross Country	106	Cessna SEP	354	Mudry Cap 10	45
Piper PA28	4	Tobago 10	3	Robin DR400	15
Rotary wing					
Total	129	PIC	29	Night	2
Cross Country	22	RH22	112	RH44	17
UAV					
Total	91	PIC	86	F450	46
Exo225	9	SPARK	11	AIR2	8
MINI4	16				

WORK EXPERIENCE

- Développeur logiciel / Ingénieur** *Self employed*

2024-2026

Software, embedded systems, and electronics project development, as well as the execution of professional assignments and personal projects in software development, embedded systems, and IT infrastructure.
- DRIVERS Software Developer** *Opal-rt*

2023-2024

Contributed to the development of a real-time simulator based on a PC/FPGA architecture, running on Windows and Linux
 - Developed and maintained drivers and communication interfaces, including Modbus and CAN
 - Analyzed interfaces between the system's various software and hardware components
 - Contributed to the evolution and improvement of software tools supporting the simulator
 - Developed and maintained software components in C/C++
 - Contributed to improving technical documentation
 - Analyzed and debugged issues in an environment combining software, hardware, FPGA, and network/bus communications
 - Worked in a real-time systems environment involving software-hardware interaction, requiring rigor, traceability, and a strong understanding of the overall system architectureC/C++, real time, Linux, Windows, FPGA, Modbus, CAN.
- Devops** *Omnirobotic*

2020-2022

Contributed to the design and administration of the DevOps infrastructure required for the development of robotic systems
 - Design and maintenance of CI/CD pipelines based on Drone CI and Docker
 - Development of a system enabling developers to deploy on-demand development environments closely matching production

- Development of automation tools and scripts using Python and Bash
 - Management of Linux systems and interconnected services in a robotics environment
 - Analysis and resolution of issues related to development, deployment, and runtime environments
- Terraform, Docker, Drone CI, AWS, Python, Bash, Linux.

Devops Novaquark

2019-2020

Contributed to the design and management of the cloud infrastructure for a client/server video game built using multiple technologies, including Go, Python, and C++:

- Development and maintenance of automation and deployment scripts using Ansible.
- Participation in the implementation of on-demand development environments in the cloud.
- Automation of AWS EC2, VPS, and RDS infrastructure provisioning using Terraform.
- Development of administration tools and scripts in Python and BASH.
- Analysis of interactions between the various components of a distributed architecture.
- Collaboration with development teams to improve the reliability and control of deployment environments.

Ansible, Terraform, AWS, Linux, Python, C++, Go

Software developer / Engineer Self employed

2018-2019

Software, embedded systems, and electronics project development.

Technical Associate, Vehicle Simulation Consultant at CAE Montréal

2016-2017

Contributed to the development of flight simulators for various aerospace programs, including the C Series and Embraer 145.

- Development of software systems for the simulation of aircraft systems.
- Development of Air Traffic Control (ATC), TCAS, EGPWS/TAWS, and weather radar systems.
- Participation in the design of various types of simulation devices, including flight simulators, flight training devices, and integrated procedural training devices.
- System integration and validation in a real-time environment

C++, Real time, Simulation, Avionics, ATC, TCAS, TAWS, WXR, GWX

Software engineer CEL Aerospace Longueuil

2015-2016

Development and maintenance of a test bench for aircraft engines

- Integration of new engines into the existing solution
- Development and improvement of software drivers
- Development and execution of test plans
- Preparation of technical documentation and test reports
- Development in a real-time embedded environment

C, VB.NET, QNX.

Programmer C++ Consultant at CMC Electronics/Esterline Montréal

2014

Contributed to the development of synthetic vision systems for avionics applications

- Analysis and preparation of system specifications
- Development of features in C++
- Design and execution of LLT and HLT unit tests
- Work in a development environment compliant with aviation certification requirements

PFD, SVS, DO-178B Level B/C, C++.

Software developer Thales Canada Avionics Division

2012-2014

Contributed to the development of software flight control computer used in aerospace applications

- Analysis, preparation, and review of design and specification documents
- Design and development of software components based on detailed specifications
- Software development in an environment subject to DO-178B certification requirements
- Development and execution of LLT and HLT unit tests
- Collaboration with development and verification teams

SCADE, TCL, DO-178B Level A/D, embedded systems, avionics

Several internships

2008-2011

- Aircalin: Development of a tool allowing personal management (2 months)
- Société Le Nickel: Module design for GLPI(2 months) 2009
- École Polytechnique de Montréal: Study of different architecture with RESP-SIM (4 months)
- Laboratoire d'Astrophysique de Bordeaux: Creation of the software part for high speed analog-to-digital converter project (4 months)

Contractor

Developer/Engineer/Hacker

2009-2026

Developed software, embedded, and electronics projects, with a strong focus on hardware/software integration, system interfaces, and solution reliability

- Developed board game adaptations for the Board Game Arena platform, including SHOKOBA and VIZIA

- Contributed to various open-source projects, analyzing and integrating existing code and software components
 - Designed and developed electronic prototypes and embedded, interconnected systems based on microcontrollers and single-board computers
 - Developed software and firmware in C/C++ and Python
 - Developed solutions using embedded Linux, Raspberry Pi, and Arduino
 - Developed web applications and interfaces using PHP, JavaScript, and HTML
 - Integrated hardware, software, and systems to build functional prototypes
 - Analyzed hardware and software architectures, as well as communication interfaces between components
 - Implemented and experimented with network communications and communication buses
 - Prepared technical documentation and analyzed issues during integration and debugging phases
- C/C++, Embedded Linux , Android, Arduino, Raspberry pi, Web(PHP/JS/HTML)

System Administrator

2009-2026

Designed, deployed, and administered a multi-system IT infrastructure consisting of approximately ten workstations and multiple network services

- Deployed and administered Linux services, including DNS, web, email, VPN, and database services
- Configured and maintained Internet-facing services
- Implemented VPNs and access control mechanisms to secure communications
- Monitored services and analyzed incidents to ensure system availability
- Automated administration tasks using Ansible, Bash, and Python
- Managed physical and virtual servers as well as cloud environments
- Analyzed interactions between services, networks, and systems to diagnose and resolve issues
- Maintained and evolved an infrastructure composed of interconnected systems
- Implemented backup, monitoring, and automation solutions

System administration, Apache, Postfix, Bind, OpenVpn, Linux, Ansible

Feasibility study for using my Bike project as Business

2018-2026

Development of a smart bicycle lighting system, from initial concept through prototype development

- Business plan development and product definition
- Fundraising and preparation of a crowdfunding campaign
- Research and selection of partners for electronic and industrial design
- Embedded firmware development
- Coordination of technical aspects with various suppliers and partners
- Experimentation, prototyping, and validation of different technical solutions
- Analysis of hardware and software system constraints
- Definition of the product's technical architecture
- Integration of electronic and software components

Product development, Embedded firmware, Electronics, prototyping, Entrepreneurship, project management

EDUCATION

M.Sc. in Computer Science – Avionics / Embedded Systems *École Polytechnique de Montréal*

2011-2012

Main courses:

- Avionics
- Embedded system: design and verification
- Avionics embedded computer sciences

Engineer's diploma in computer sciences in complex systems engineering *EISTI*

2004-2010

Main courses:

- Embedded system
- Artificial intelligence
- Low-level programming (C/system/Networking)

LICENCE

Canadian CPL(H) *Helipsair*

2016-2017

Canadian CPL(A) *Dorval Aviation*

2014-2015

Canadian PPL(A) (Conversion) *Dorval Aviation*

2009-2010

French PPL(A) *Air Services (2003)/ Aéroclub Calédonie Henri Martinet*

2000-2004

UAV Training *Exodrone*

2018

QUALIFICATION

SE sea *Dorval Aviation*

2014

Aerobatic rating *Aéroclub du Béarn*

2007

Night rating *Aéroclub du Béarn*

2007

SE land *Air Services (2003)/ Aéroclub Calédonie Henri Martinet*

2004

PROJECT

Design of a pilot assistant for aircraft making

Project aiming the research phase for a pre-prototype for an embedded system who avoids crash of aircraft model making.
Spartan 6, Embedded Linux, Aeronautics

Study for UAV system

Requirement studies for an UAV who comply with aeronautics authorities
Real time, Critical system

Design of MP3 player

Design of MP3 player on Virtex 2 PRO hardware. This project uses MicroBlaze microprocessor
Virtex 2 PRO, EDK, MicroBlaze (Language C), real time

Design of a bicycle lighting system

Ligh system front and rear for bike with turn and brake indicator
Arduino, Led strip, Toughness (Hostile environment: IP67)

Design of embedded processor

Project aiming the study if an ASIP having for target an algorithm of high dynamic range image processing (HDR)
ASIP, Xtensa Tensilica

Realization of Von Neumann machine

Realization of necessary module by the architecture: memory module who save data and instruction; arithmetic logic unit module carry out data processing and control unit manage operation: FETCH instruction , DECODE it and EXECUTE it.
VHDL

Building of an home tablet

Reuse of an old laptop lcd panel for user interface and single board computer
Raspberry Pi, Android, Banana Pi, Touchscreen

LANGUAGES

French: mother tongue
Japanese: conversational
French VFR Level 6

English: fluent
Spanish: basic Knowledge
English VFR Level 4

HOBBIES

Horse ridding
Board Game
Skydiving

Aeronautics: Pilot (plane/helicopter), Drone
Travelling
Scuba diving