

Hervé Dang

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PERSONNAL SUMMARY

Software developer 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++, Python, Scheme, JAVA, Go, PHP, .Net
System Administration : BASH, Ansible, Apache, Postfix, Dovecot, Bind, OpenVPN
Devops: Containerization and orchestration (Docker/Kubernetes), Cloud computing(AWS, Azure...)
Tools / method: UML, Design Pattern, IA(Prolog,Algorithme Génétiques, Réseaux de neurones...), BDD(MariaDB, Oracle..)
Additional skill: Aeronautics, Embedded, Security

WORK EXPERIENCE

IT

- 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 architecture
C/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

Contractor

- Developer/Engineer/Hacker** Self employed 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** Self employed 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** Business development 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

Aeronautics

- Technical Associate, Vehicule 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 - 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.	2015-2016
Programmer C++ Consultant at CMC Electronics/Esterline Montréal - 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++.	2014
Software developer Thales Canada Avionics Division - 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	2012-2014

EDUCATION

Master's degree in computer sciences École Polytechnique de Montréal	2011-2012
Main courses: Embedded system Networking Programmation	
Engineer's diploma in computer sciences EISTI	2004-2010
Main courses: Software design System information engineering Project Management	

LANGUAGES

French: mother tongue
Japanese: conversational

English: fluent
Spanish: basic Knowledge

HOBBIES

Horse ridding
Board Game
Skydiving

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