Hugo Flora Velhinho, B. Eng.

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Written and spoken languages: English, French, Portuguese, German

WORK EXPERIENCE

Software Engineer (Freelance) since 04.2018

Modis Contracting Solutions GmbH/Alpine Electronics R&D, Munich, Germany

Responsibilities:

- Development of Windows Presentation Framework .NET (WPF) applications and test tools.
- Perform Tests, bug reporting and bug fix confirmation.

Real-Time Software Engineer (Freelance) 05.2018-12.2018

Reiser Simulation and Training GmbH, Mörlbach, Germany

Responsibilities:

- Design and implementation of a computer generated entities library for air, ground and naval units to be used in the helicopter simulators.

Software Engineer (Freelance) 11.2015-03.2018

Personality-IT/Alpine Electronics R&D/Harman-Becker, Garching bei München, Germany

Responsibilities:

- Development of Windows Presentation Framework .NET (WPF) applications and test tools.
- Perform Tests, bug reporting and bug fix confirmation.

Real-Time Software Engineer (Freelance) 08.2016-02.2017

Reiser Simulation and Training GmbH, Mörlbach, Germany

Responsibilities:

- Design and development of a flight simulation software library.

Realizations:

- Design and implementation of C++ library to convert the Computer Generated Entities from the customer's proprietary simulation framework to the CIGI protocol used by the Image Generator.
- Extension of the library to support DI-Guy human characters animations in addition to air, ground and naval entities.

Software Engineer 10.2014-10.2015

ESAS automotive, Ingolstadt, Germany

Responsibilities:

- Maintenance and development of CAN and MOST network simulation modules
- Development of software tools (CANOE, C#) to support the engineering process.

Realizations:

- Simulation nodes and applications with user interfaces.

Real-Time Software Engineer 06.2013-09.2014

Ferchau Engineering GmbH, Munich, Germany

Responsibilities:

- Design and development of flight simulation software modules at Airbus Defense and Space.

Realizations:

- Design and implementation of C++ interface between Image Generator and the customer's proprietary SIRIUS simulation framework.

Real-Time Software Engineer

07.2010-12.2012

Sim-Industries (Lockheed Martin), Sassenheim, Netherlands

Responsibilities:

- Design and development of flight simulation C/C++ software modules

Realizations:

- Datalink simulation including AOC and ATC applications for airbus A320/A330 simulator
- Port and modification of a Weather Radar simulation from Linux to Windows
- Redesign and development of the ATIS simulation
- Wind gust model design

Integration Specialist

2008-2010

CAE, Montreal, Canada

Responsibilities:

- Modification and integration of flight simulation C/C++ and Fortran software modules
- Identification and resolution of software problems and ensure proper simulator operation
- Lead and offer technical support to software engineers during integration of their systems

Realizations:

- Integration of CRJ900 update to CRJ200 flight simulator at CST Berlin
- Integration of CRJ1000 update to flight training device at Bombardier Montreal
- Integration of CRJ1000 update to CRJ700/900 flight simulator at Bombardier Montreal
- Integration of B737-Classic update to flight simulator at CasaAero Casablanca

Integration Specialist

2007 - 2008

Fédération des caisses du Québec, Montréal, Canada

Responsibilities:

- Integration and maintenance of Windows and AIX servers farm (100+)
- Offer 2nd level support to clients for servers administration and application use

Realizations:

- Installation and configuration of different web applications
- Automation through scripting of the daily availability verification of web applications
- Automated system for the management of the servers backups and SQL databases backups

Real-Time Software Engineer

2005 - 2006

Opal-RT, Montreal, Canada

Responsibilities:

- Design and program hardware drivers for real time applications on Matlab Simulink
- Support users and update existing drivers when needed

Realizations:

- Hardware drivers for QNX and Linux for different PCI communications devices, mainly for the automotive industry.

Engineering Internship

2003 - 2003

General Electric Energy Services, Pointe-Claire, Canada

Responsibilities:

- Perform hardware and software tests on dissolved gas detectors
- Coordinate hardware and software development with the subcontractors

Realizations:

- Improvement of a new gas detector device for oil isolated, hi-power transformers (Hydran M2)

Engineering Internship 2002 - 2002

MPB Communications Inc. Pointe-Claire, Canada

Responsibilities:

- Choose applicable tests and run them on miniature fiber optic amplifiers prototypes

Realizations:

- Documentation of prototypes conformity on Telcordia standards

Fiber Optics Technician 2000 - 2001

MPB Technologies Inc., R&D group Pointe-Claire, Canada

Responsibilities:

- Build, test and repair fiber optic amplifiers and light sources

Realizations:

- Automation of laboratory and production test equipment with Labview and C language

TECHNICAL SKILLS

Information Technology:

- Design and development of simulation modules using UML
- Software integration and programming on Windows, Linux, QNX
- Low level (C, Fortran) and high level (C++, C#, MatLab, Simulink) programming
- Graphic interface programming with Qt, WPF, Ogre 3D (OpenGL) APIs
- Scripting languages: Bash, Lua
- IDE Eclipse for C++ development and debugging
- networking protocols (TCP/IP, UDP). Packet analysis on Ethernet networks
- Project management with MS Project

Embedded Systems:

- Microcontrollers-based circuit design and programming
- Software optimization for real-time applications

Instrumentation:

- Measurement equipment automation through GPIB protocol
- Computer based data-acquisition and analysis with LabVIEW

Electronic:

- Design and simulation of analog and digital circuits with OrCAD and PSpice
- Debugging and correction of electrical circuits and boards with instruments such as oscilloscopes, spectrum analyzers and logic probes

EDUCATION

Specialized Graduate Diploma for Management (DESS) 2007

École des hautes études commerciales de Montréal (HEC), Montréal, Québec

Electrical Engineering Degree, telecom concentration 2004

École de technologie supérieure (ETS), Montréal, Québec

End-of-term project: Addition of Real-Time capabilities to a popular Linux Distribution

A standard RedHat Linux kernel was converted into a real time kernel. The system was tested by porting a digital oscilloscope application. Digital sampling was done on with an external microcontroller based capture card and data was displayed in a Qt graphical user interface.

Diploma of Collegial Studies, Physics and technology 2000

André-Laurendeau College, Lasalle, Québec

End-of-term project: Wheelchair for young children

This project involved the modification of the electronics and a complete rewrite of the microcontroller software. The microcontroller was used to read the sensors and control the power electronics for the motors. LabVIEW was used during the design to acquire and process data for system optimization.

MENTIONS

President of the students association (DESS for management) at HEC Montreal in 2007

« Audience Award », End-of-term Projects for Electrical Engineering
Cégep André-Laurendeau, spring 2000

« Communication » Award, Local “Science on Tourne” competition
Cégep André-Laurendeau, winter 1998.

References are available upon request.