Mikael Trigo da Silva

Hardware Development Engineer at NetModule AG

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Résumé

I'm an Electronic Engineer with a Master degree in Embedded system with a big interest for FPGA development. Specialties: -R&D, Hardware design, Embedded Systems Design and verification with FPGAs , VHDL - SoC-zynq-7000 architecture - IEC62439 (PRP/HSR), Ethernet , SDR - SW-FW co-design using Lua scripting language for FPGA-based system Tools: HDL designer, Modelsim, Vivado 2014/2015 , ISE

Expérience

Hardware Development Engineer ， NetModule AG

June 2014 - Present (1 year 7 months)

Embedded Hardware Engineer in a wide variety of customer projects - FPGA development - FPGA verification - TI PRU-ICSS programming - Netjury(Ethernet Real-time test device) FPGA development of real-time(MAC layer) Ethernet packet generator and analyzer l: http://www.netmodule.com/products/automation/network-test-device.html - FPGA implementation of the Signal chain of high performance Software Defined Radio (SDR) Modem to extend Ethernet connections over the air.

Master Thesis Student ， KEYMILE

September 2013 - March 2014 (7 months)

Design specification and development of a High-availability Seamless Redundancy (HSR) RedBox (management of the HSR protocol for NON-HSR capable devices in industrial Ethernet redundant network) in a FPGA. Solution as IP Core using VHDL code with Xilinx environment. The main focus was developing efficient data management and finding proper algorithms as to reach timing closure and low resources. Development of test bench for RTL functional simulation. Key words: VHDL, Ethernet, Secure Protocols, MAC, memory management, simulation&verification (VHDL).

Scientific collaborators 20% ， EIA-FR

October 2012 - April 2013 (7 months)

JTAG testing study for the PCB manufactured at the EIA-FR. Creation of a tutorial and a practical work about the software CoFLUENT for the Bachelor students.

Bachelor Thesis ， Lawrence Berkeley National Laboratory

June 2012 - August 2012 (3 months)

Creation of a benchmark fort studies of high speed data transmission in relation with the ATLAS detector of the large Hadron Collider (LHC). PCB design to accommodate 640 MHz dedicated lines, consideration of potential interference and cross talk effects. FPGA-based processing system using VHDL to run/monitor

data through transceivers in order to test a dedicated chip. Creation of a LabVIEW interface (GUI) to send/receive commands with the FPGA. Link: https://webapp.eia-fr.ch/gestionprojets/uploads/2011/B12GE30_TrigoDaSilva_Studies_of_High_Speed_Data_Transmission.pdf

Assistant Engineer ， Meggitt PLC

June 2010 - August 2011 (1 year 3 months)

Performing automatic and manual testing on electronic circuits that comes out of production. The mains tasks was to find failure and repair the defective unit in the aeronautics testing department. Improving small test unit.

Apprenticeship ， Meggitt Sensing system

August 2004 - August 2008 (4 years 1 month)

Analog/numeric electronic design development for the company and for dedicated projects. PCB design using Altium designer (maximum 2 layer), programming microcontrollers PIC, realization of benchmark. Creation from scratch of solar panel which follows the sun in two axes to charge a battery efficiently. The mains tasks were: Project management (along with the mechanical department), schematic creation, PCB design, signal processing, PIC programming, development of efficient algorithm.

Distinctions et prix

Prix Phonak Communications, Mora

July 2012

Par ce prix, Phonak Communication exprime la reconnaissance de l'excellence du travail réalisé lors du projet de Bachelor effectué à l'école d'ingénieurs et d'architectes de Fribourg

Programmes

Master of Science (M.Sc.), Embedded system, Electrical, Electronics and Communications Engineering

University of Applied Sciences and Arts Western Switzerland

Construction de systèmes embarqués sous Linux Cours
Design of communicative embedded systems Cours
Hi-Rel Electronics
Systèmes d'interaction homme-machine
Logiques programmables pour systèmes complexes et performants.
Systèmes Embarqués Basse Consommation
Systèmes d'exploitation et environnements d'exécution embarqués
Vérification des systèmes numériques
Traitement numérique d'image
Design of Embedded Hardware and Firmware

Informatique temps-réel embarquée
Wireless Communications
Cryptographie et théorie du codage
Leadership en entreprise
Direction d'entreprise et entrepreneuriat

Projets

Semester Project: vibrating wire sensor digital control
mai 2011 à juillet 2011
Members:Mikael Trigo da Silva

Replacement of an analog design of an electronic system to measure forces with a vibrating wire sensor by a digital design (FPGA). This work served as a feasibility study for implementation of specific integrated circuit (ASIC).

Project, Design of Embedded Hardware and Firmware
février 2013 à juin 2013
Members:Mikael Trigo da Silva

System On programmable Chip design using a NIOS II and the Avalon bus with an Altera Cyclon IV. Build dedicated peripheral interface for LCD. Optimization of memory access (DMA). Software/Hardware co-design with the implementation of custom instructions to get a real-time Sobel algorithm for image processing.

Semester Project: Energy Harvesting
avril 2010 à juin 2010
Members:Mikael Trigo da Silva, Nicolas Gugger

Energy scavenging experiments with a piezoelectric and thermo electric devices. The project consisted of the design and construction of two system, the experimental measurements, data acquisition and analysis and the use of an energy harvesting circuitry to charge a battery.

Speech at the Embedded computing conference 2015
septembre 2015 à Poste actuel
Members:Mikael Trigo da Silva

Descriptions of Agile Software firmwatre Development for FPGA based Systems using Lua scripting language

Langues

French (Native or bilingual proficiency)
English
German (Limited working proficiency)

Compétences et expertise

Electronics

FPGA
VHDL
System Logic
C
Matlab
Embedded Systems
Embedded Linux
SoC
Xilinx
Microcontrollers
Simulations
Hardware Architecture
Testing
Programming
ModelSim
Algorithms

Formation

University of Applied Sciences and Arts Western Switzerland
Master of Science (M.Sc.), Embedded system, Electrical, Electronics and Communications Engineering, 2012 - 2014

University of Aplied Science HES-SO fribourg
Bachelor of Applied Science (BASc), Electrical and Electronics Engineering, 2010 - 2012

Whatcom community college
Exchange student in Bellingham, USA, English,Economy basics,math and physics, 2008 - 2009

Vocational School (EPAI Fribourg)
Federal Certificate of Capacity, Electronic, Electrical and Electronics, 2004 - 2008

Vocational School (EPS Fribourg)
Professional Technical Maturity Certificate, 2004 - 2008

Centres d'intérêt

Soccer and tennis: amateur player, event organization, youth trainer. Referee in skater-hockey. Fan of sports team in general. New technologies, travelling, cinema, reading. Jeunesse de Lugnorre: The goal of this association is to group the young of the village (from 16 to 25 years old) and to allow them to organize event in order to go on holiday one week every second year even for young people having few #nancial means. Three years as financial manager of the association, active participation to the organization of events, decision making, team leading, management of the association.

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Prenez contact avec Mikael sur LinkedIn