http://uk.linkedin.com/pub/michele-costantino/9/77a/9a1

Personal Details

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Professional Profile

Senior Electronics Engineer with more than 10 years experience in mixed-signal electronics design. Well-rounded electronics designer with good analytical skills and very hands-on at the same time. Familiar with small and large organization environments, capable to work on critical projects both on his own and in team having significant experience in product development and support to manufacturing throughout the entire product life cycle.

Skills

Analog and Mixed Signal Systems Design

- PSpice, Simetrix, LTSpice,TINA Simulation
- ADC and sensor signal conditioning
- Analysis of feedback control loops, stability and frequency compensation
- Switch Mode Power Supplies and Power Electronics
- High Voltage Electronics
- High Temperature Electronics
- Matlab/Simulink/Octave modeling

PCB Design

- EMC Layout optimization, Signal Integrity
- Altium Designer
- Kicad PCB
- Easy PC / Pulsonix
- Orcad Capture, Layout, Allegro/PCB Designer

System Prototyping - Assembly – Testing

- Design, assembly and testing of multilayer PCB boards, Through Hole and SMD Technologies
- Oscilloscope, Logic Analyzer, Multimeter, Spectrum Analyzer, Frequency Response Analyzer and other Electronics Lab Test Equipment

Digital Systems Design

- Embedded Systems - Microcontrollers and FPGAs
- VHDL, Timing Analysis, Logic Simulation and Functional Verification
- ALTERA Quartus II, SOPC Builder, XILINX ISE, LATTICE ispLever/DIAMOND, ACTEL/MICROSEMI LIBERO IDE/ SoC
- ALTERA Cyclone III/Stratix, ACTEL MICROSEMI IGLOO2, ProASIC 3 and ProASIC3 Plus, LATTICE XP, XP2, ECP2 FPGAs
- Mentor Graphics Modelsim
- Nios II, Microchip PIC32 32bit, dsPIC30, PIC24,16bit, PIC18 and ST Microelectronics ST62 8bit Microcontrollers
- LCD Displays Controllers SSD1906, T6963C, HD44780
- Interface systems: USB, CAN,LVDS, SPI, I2C, PC104, RS232, RS485, 4-20mA

Firmware Design

- ANSI C – MPLAB XC32, C30,C18 NIOS II EDS Eclipse, Microchip MPLAB, MPLABX-Netbeans
- Microchip USB Framework and Graphics Library
- Assembly (MIPS, dsPIC30, PIC18, ST62)

Employment History

(References available upon request)

Dec 2015 – Present

Senior Electronics Design Engineer – Pulse Structural Monitoring – Woking, Surrey
http://www.pulse-monitoring.com/

Pulse Structural Monitoring, an Acteon company, is the leader in marine structural monitoring.

Designing and development of Data Loggers for oil and gas sub-sea environments:

- Finalised the design of the hardware and the VHDL for the INTEGRIpod NXT logger platform;
- Designed power converters to integrate battery powered equipment with wired power sources.

May 2014 – Nov 2015

Electronics Design Engineer – McLaren Applied Technologies – Woking, Surrey
www.mclaren.com/appliedtechnologies/

McLaren Applied Technologies is an automotive-industry British company which focuses on creating technical applications for the McLaren Group and also works with many other companies. Also it is electronic division, McLaren Electronics manufactures parts for every F1 team and other sports:

Designing and development of Electronic Systems for F1 and Motor-sport applications:

- Designed part of the Main Power Unit for the McLaren Honda MP4/30 – MP4/31 Formula 1 Energy Recovery System: DC/DC converters, SiC Mosfet Gate Drivers, DC Link Capacitor banks, Current sensing circuitry

Jun 2012 – Apr 2014 / Oct 2006 – Oct 2008

Senior Electronics Engineer - Microsaic Systems Plc – Woking, Surrey – www.microsaic.com

Microsaic Systems plc is a high technology company developing and marketing next generation mass spectrometry (MS) instruments for the analysis of gaseous, liquid and solid samples - providing solutions to enhance workflow and productivity:

Reviewed, debugged, partial re-designed the electronics of the "*4000MiD*" Mass Spectrometer:
http://www.microsaic.com/4000-mid/

- DC/DC converters, high voltage amplifiers using discrete components in standard topologies but also using reverse biased photodiodes, High voltage high frequency sine wave generators for Quadrupole Mass Spectrometers (3KVp @ 6MHz) and related measurement circuitry, pulse detection and counting circuitry, VHDL I2C interfaces using Lattice XP, XP2 and ECP2 FPGAs;

Designed the electronics of the "*MiDas*" reaction monitoring interface unit for mass spectrometers:
http://www.microsaic.com/news/56/92/Microsaic-Systems-launches-compact-MiDas-interface-unit-for-real-time-reaction-data-with-miniaturised-mass-spectrometry-instrument.html

- Microchip PIC32 based USB-to-six UARTs Hub programmed in ANSI C and related power electronics drivers for pumps and relays.

Production transfer and manufacturing Product Life Management support for the electronics of the 4000MiD and MiDas products;

Designed the electronics related to the development of the Microsaic 3500 MiD Ionchip based Mass Spectrometer :
http://www.rdmag.com/award-winners/2012/08/most-compact-ms-liquids

Jan 2011 – May 2012

Electronics Design Engineer – General Electric - GE Energy - GE Oil & Gas – Sondex Wireline, Farnborough, Hampshire – www.ge.com

Sondex Wireline (GE Oil & Gas) produces electronic equipment designed to operate and take precise measurements in the hazardous conditions of oil wells:

Reviewed, debugged, partial re-designed the electronics of the "*Multi Array Sonic Tool (MAS)*" for the evaluation of porosity of oil well formations:

http://www.ge-energy.com/products_and_services/products/wireline_systems/mulit_array_sonic.jsp

Designed part of the electronics related to the "*Dual Laterolog Tool (DLL)*" for the evaluation of the resistivity of open hole well formations

- Designed the main current drivers of the dual laterolog tool based on the Howland pump, a 20W Isolated SMPS based on the current mode Flyback topology, Multiplying DAC and DDS sine wave generators using dsPIC30 PIC microcontrollers programmed in assembler, a VHDL power sequencer using a Xilinx Coolrunner CPLD;

Production transfer and manufacturing Product Life Management support for the electronics of the "*Multi Array Sonic Tool (MAS)*"

- Redesigned the layout of the MAS Transmitter PCB.

Oct 2008 – Dec 2010

Electronics Design Engineer – TA Instruments – Waters Corporation, Crawley, West Sussex – www.tainstruments.com

TA Instruments (Waters LLC), is the world leader in Thermal Analysis, Rheology and Microcalorimetry:

Designed half of the electronic modules and the firmware of the "*Discovery Hybrid Rheometer*" http://www.tainstruments.com/product.aspx?id=257&n=1&siteid=11

- Digital control for Drag Cup Motor (VHDL PID controller on Altera Cyclone III FPGA);
- Microcontroller based boards programmed in ANSI C and communicating through CAN Interface: strain gauge load cell and temperature acquisition system, LCD display panel, touch keyboard, production testing equipment.

May 2004 – Oct 2006

Electronics and Firmware Design Engineer – Microtherapeutics S.a.s. – Martina Franca, Italy – www.microtherapeutics.it

Microtherapeutics S.a.s. is a company providing services and equipment for physiotherapists and aestheticians:

Designed a whole range of muscle stimulators, equipment for rehabilitation (ultrasound therapy, magneto therapy) and aesthetics applications.

- Microcontroller based boards programmed in assembler and ANSI C using ST Microelectronics ST62 and Microchip PIC18.

Jul 2002 – May 2004

Applications Engineer – ST Microelectronics – Catania, Italy – www.st.com

ST Microelectronics is one of the biggest and with the largest product portfolio semiconductor manufacturers of the world:

- Characterization and development of standard logic gates and LVDS interface devices: STLVDS385 - 85 MHz FPD-Link TTL/LVDS serializer http://www.st.com/web/en/resource/technical/document/datasheet/CD00005119.pdf

Education

- **Electronics Engineering Degree** - Politecnico di Bari University, Bari, Italy
- **Introduction to Power Electronics** - Coursera Verified Certificate License Number MPNWVMAGC5 https://www.coursera.org/account/accomplishments/certificate/MPNWVMAGC5
- **Advanced Converter Control Techniques -** Coursera Verified Certificate License Number 5J9Y8WVLFRB9 https://www.coursera.org/account/accomplishments/certificate/5J9Y8WVLFRB9
- **Magnetics for Power Electronic Converters -** Coursera Verified Certificate License Number ER65QUEVZRV6 https://www.coursera.org/account/accomplishments/certificate/ER65QUEVZRV6
- **6.002x: Circuits and Electronics**, a course of study offered by MITx, an online learning 2012 - The Massachusetts Institute of Technology through edX https://verify.edx.org/cert/35957c7a127f43c987dec11e2e580456
- **Cadence OrCad PCB Editor for OrCad Layout Users** – Parallel Systems, Woking, Westend, Surrey
- **Level 2, Cambridge Certificate in ESOL Skills for Life (Speaking and Listening, Writing, Reading)** - Woking College, Woking, Surrey

Language skills

- **English -** Fluent
- **Italian** - Native language

Links

- *Pulse Structural Monitoring INTEGRIpod NXT - http://www.pulse-monitoring.com/information-centre-3/news-11/pulse-structural-monitoring-launches-next-generation-integripod-nxt-subsea-motion-and-data-logging-sensor-systems-184*
- *Microsaic Systems 4000MiD - http://www.microsaic.com/4000-mid/ https://www.youtube.com/watch?v=gAuMmH7R5Ps Microsaic Systems MiDas - http://www.microsaic.com/midas/*
- *Award winner Microsaic Systems 3500 MiD - http://www.rdmag.com/award-winners/2012/08/most-compact-ms-liquids*
- *TA Instruments Discovery Hybrid Rheometer - https://www.youtube.com/watch?v=Im23R2OEdPk*
- *"I2C interface has galvanic isolation, wired-OR capability, improved noise margin": EDN design idea – EDN, 5/7/2007 – EDN Europe 1/8/2007 http://staging.edn.com/design/analog/4315260/I%C2%B2C-interface-has-galvanic-isolation-wired-OR-capability-improved-noise-margin*
- *"STLVDS385 : 85MHz TTL to LVDS serializer suitable for flat panel displays": ST Express no.89 – October 2003 http://www.anglia.com/st/literature_pdfs/st_express_69.pdf*
- *STLVDS385B - +3.3V programmable LVDS transmitter 24-bit flat panel display (FPD) link-85 MHzhttp://www.st.com/web/en/resource/technical/document/datasheet/CD00005119.pdf*