GLAUCO FIORANTE

Otsego, MN
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Summary of Qualifications

- Senior Electrical Engineer, Hardware designer, ASIC designer

- Experienced in design, development, prototype, and implementation of analog / digital circuits.
- Embedded systems, hardware, firmware, and software integrator.
- Microcontrollers and FPGAs programming in C++ / VHDL, Xilinx Vivado and Altera Quartus.

- Schematic capture, PCB layout routing in Eagle/Altium/Proteus, PCBA BOM and gerber generation.
- Experienced in board testing, validation, and debugging using laboratory instruments / equipment

- Analog, digital, and mixed signal ASIC / ROIC design flow to tape-out in CMOS 90nm, 22nm.
- Adept in Tanner/Cadence layout and floor plan, Design Rule Checking, Layout x Schematic.

- Advanced user of Microsoft Office suite for design requirements, documentation, and description.
- Functional knowledge of IoT, Wireless, Matlab, Verilog, Python, Linux, ISO9001, TCAD, SOS.

- Technical leadership and advising on electrical engineering and computer science senior designs.
- Chemical, Oil & Gas industry, and cleanroom experience.

Education

Ph.D. in Electrical Engineering, Microelectronics University of New Mexico, Albuquerque
Dissertation: “Spatio-temporal circuits for imaging sensors.”
Masters in Electrical Engineering, Microelectronics Universidade de São Paulo, Brazil
Thesis: “Autonomous Image Acquisition and Processing System.”
Bachelors in Electrical Engineering, Universidade Santa Cecilia, Santos, Brazil

Awards

FULBRIGHT Scholarship for PhD program at UNM
Bristol Award First Place National Award by Brazilian Institute of Petroleum for development of “Transfer pipeline safety electronic circuitry” to detect leakages, used for years in the RPBC refinery.

Issued Patent

G.R.C Fiorante, P. Zarkesh-Ha, S. Krishna, “Spatio-temporal tunable pixels ROIC for multi-spectral imagers,” US Patent # 9,521,346 B1, Issued December 13, 2016.

Professional Experience

Senior Electrical Engineer, Copious Imaging/Anduril Industries, Lexington, MA 01/2020– 05/2024

ASIC/ DI-BDI IR ROIC design in CMOS SkyWater 90nm, TSMC 22nm PDK. Design of custom low power, high-speed, small area, digital-in-pixel unitcell, DFF, SRAM, Mux, OpAmp, ADC, Binary/Gray code counters, SerDes, CML; RTL, schematics, simulation, floor-planning on Cadence Virtuoso, DRC, PEX, LVS verification on Mentor Calibre; Monte Carlo, power analysis, clock distribution, timing constraints, DFT, STA, ESD-Pad, tapeout, cryogenic testing and characterization with VHDL/FPGA control; LiDAR front-end R-TIA design and simulation; Design, simulation, proposal, and further adoption of new front-end buffer and digital mux architecture.

Electronics Engineer Consultant, SymmetrySensors start-up, San Carlos, CA 11/2018 – 01/2019

R&D of LASER-based Air Quality Sensor for portable IoT applications. Low-noise amplification. Battery management system and signal conditioning of LASER particle detector, PCB design.

Post-Doctoral Fellow ECE, University of New Mexico, Albuquerque, NM 10/2018 – 11/2018

Prototype of original computer architecture, novel Graeco-Latin Algorithm implementation on Multi-Domain Computer Architecture (MDA), for the Fault Tolerant Technology. Schematic capture, ModelSim simulation, C / VHDL programming of Xilinx Artix FPGAs. SPI, UART, and Wi-Fi communication protocol on Arduino ESP32 webserver. Eagle PCB layout/CCA, and BOM.

Researcher, Federal Institute of Sao Paulo, Sao Paulo, SP, Brazil 08/2013 – 11/2017

Liaison with Renato Archer Information Technology Center for Radiation-Hardened ROIC.
Principal Investigator (PI) of Industrial and Environmental Studies Research Group.
Mentoring electrical engineering and computer science senior design projects.
Advising high school students in the Scientific Initiation Fellowship Institutional Program.
Teaching in B.S. in Electrical Engineering and A.S. in Digital Systems Technology courses.

Research Assistant, Center for High Technology Materials, Albuquerque, NM 08/2009 – 07/2013

Full lifecycle of a CMOS camera system, state-of-the-art ASIC ROIC on TSMC 350nm for Spatio-Temporal pixel biasing on Infrared Quantum Dots in a WELL FPA. PCB design. FIB operation. Front-end C-TIA unitcell, opamp, level shifter, biasing, SerDes blocks design, simul. and layout. Development of FPGA system for generation of BIAS, sync signals, image signal processing. CMOS photodiodes design, I-V/V-C curve, dark current/biasing/temperature, spectral response characterization; ESD Pads design and testing; Semi-automatic wire bonding. Cleanroom use. 30um pixel ASIC ROIC design, SPICE simulation, floor-planning, tape-out, and characterization. Solar panel charge controller IC design and cross-functionality with research team. Probe station.

Product Development Engineer, Emicol Eletro Eletronica, ITU, SP, Brazil 07/2008 – 03/2009

HW design from concept to production of electronic circuits for consumer products. Atmel AT89L, Microchip PIC24F, NPX 68HC11, TI MSP430 microcontrollers for washer, dryer motor speed control, and for Diesel-based Fuel Flow Meters. Cross-functionality with mechanical team.

Electronics Engineer, Brisa.org, Sao Paulo, SP, Brazil 02/2003 – 07/2003

Research and development of a System for Automated Machine Vision Inspection using CMOS cameras for quality control through the capture and processing of images of PCBAs, sponsored by LG. Motion control using PLC. Cross-functionality with software team.

Engineering Manager, Unica Services, Santos, SP, Brazil 01/1998 – 07/1999

D&D of a power regulator for 18KVA generator, used in the Santos-Guaruja Ferry. PCB design. Design and delivery of a 0-500C K-type thermocouple temperature indicator for Nitric Acid plant. Management and technical leadership of 23 field technicians and three staff employees as a contractor for a Cable TV company, servicing a base of 50,000 customers. AutoCAD/MapInfo SW

STEM outreach organization

IFCIENCIA 2015-2016-2017, IFSP, Salto, BR.
Engineering Week 2005-2006-2007, FITO, Osasco, BR.

Voluntary Work

President of the Teachers and Parents Association of IFSP, Cubatao, Brazil, 2000 – 2001.
Maintenance and calibration of medical devices (electric scalpel, EKG) at Santos Hospital.

Publications

Please, vide LinkedIn.