

Daniel Rebello
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Boca Raton, FL

PROFESSIONAL SUMMARY

Innovative and Articulate Senior Consultant with extensive leadership experience in product research, design, architecture and development.

CORE COMPETENCIES

- Project Leader and Mentor
- Excellent Communication Skills
- Data Analysis, Algorithms
- Embedded Systems, Electronics
- Analog and Digital circuit design
- Microprocessors, ASIC, SoC
- FPGA, FPD, PLD, HCPLD
- Schematic Capture, CAD, PCB Layout
- Digital Signal Processing (DSP)
- RF, PSK, Q-PSK and QAM modulation
- Fourier Transforms, FFT, DFT
- Radio and RF Propagation, Wireless
- ISA, MCA, S-Bus, PCI and PCIe
- Firmware, BIOS, RTOS, Device Drivers
- Security, PKI, Cryptography
- TCP/IP, IPv4, IPv6
- Project Management, Technical Liaison
- Requirements Capture, Architecture
- Antennas, RF Shielding, Wireless, WIFI
- Signal Integrity (SI), Signal Processing
- High-Speed Digital Circuits
- LVDS, I2C, SPI, QSPI, DDR4, LPDDR4
- ABEL, HDL, VHDL, Programmable Logic
- Intel x86/x64, MIPS, ARM Architecture
- Software Defined Radio (SDR)
- MATLAB, Simulink and Mathematica
- FIR, IIR Filter Design, Correlation
- Algorithm Development and Performance
- Network Physical Layer
- Embedded and Real-Time Programming
- Assembly Language, C, C++ and Python
- System Analysis and Design, UML

PROFESSIONAL EXPERIENCE

Stream Server Laboratories, Boca Raton, Florida

2017-Present

Principal Consultant:

- Design of High-Speed High-Density Interconnect (HDI) CCAs
- Xilinx Artix, Zynq, Virtex and PolarFire FPGA Electrical Design
- DDR, LVDS, SPI and I2C Electrical Design
- Ethernet 10GbE, 25GbE, 100GbE, RGMII, USB, SerDes Electrical Design
- DC-DC Converters, Power Design and Power Integrity
- Circuit and PCB Design
- Cadence Allegro , Orcad and Concept EDA
- Mentor Xpedition and Zuken EDA
- Phase and Impedance Matching
- Signal Integrity Analysis with Hyperlynx and SIWave
- PCI Express Bus (PCIe), NVM Express (NVMe)
- Software Defined Radio (SDR), GPS Receiver Design
- Space Environment, Orbital Modeling, Satellite and Wireless Networks
- Network Physical Layers, IP Network Stack

- QPSK and QAM modulation, Digital Filters, RF, WIFI
- Signal Processing
- Bluetooth Low Energy (BLE) Device Driver and WinRT Application
- Layerscape LS1043A System Design
- C, C++, Windows Device Drivers and WinRT Programming
- Firmware and U-Boot Programming

ARRIS, Boca Raton, Florida

2014-2017

Principal Engineer:

- Lead Security Architect
- Circuit Design, Algorithms, C and C++ Programming
- Bootloader Firmware, Secure Boot
- Embedded System Electrical and Electronics Design
- IPv4 & IPv6 Network Stack, TFTP Network Server
- Linux Embedded Operating Systems
- Public Key Cryptography, PKI, Encryption, Certificates, Authentication
- Static and Dynamic Code Analysis, Fuzzing, Network Security
- USB and Mass Storage Device Drivers
- Root Cause Analysis, Engineering Design, Development Activities
- Virtualization, Computer Engineering, Visual Studio
- Requirements capture, Test Plans and Problem Investigation
- Prototype and proof of concept embedded systems
- NAND storage technology

Georgia Institute of Technology, Atlanta, Georgia

2011-2014

Physicist:

- Electronics Design of high speed (5GHz) PCB for HAWC experiment
- Gamma Ray Burst (GRB) analysis algorithms for NASA's Fermi Space Telescope
- Signal Processing, Signal Detection, Digital Filters, FFT, noise reduction
- Research, Gamma Rays, X-Rays, Satellite Trajectory, Space Environment
- Schematic Capture, PCB Design, circuit design, component selection
- Cadence Allegro, DxDesigner, OrCAD and Eagle

Cisco Systems (formerly Scientific Atlanta), Lawrenceville, Georgia

1996-2014

Senior Staff Electrical Engineer and Technical Leader

- Led Bootloader firmware efforts across multiple projects
- Led cross-platform team responsible for sub-system design and architecture
- Lead Architect for embedded software on set-top products
- Architecture, definition and design of real-time embedded systems
- Requirements capture and documentation
- Conducted weekly project status, design and code review meetings
- Bootloader Firmware for SPARC, MIPS and ARM set-top
- Public Key Cryptography, Authentication and Vulnerability Assessment
- PKI, PKCS, ASN.1, X.509 and cryptography
- RF modem, tuners, mixers, spur reduction, noise and BER reduction
- CPLD and FPGA logic

- DHCP, ARP, TFTP and client IP stack implementation
- DOCSIS, MPEG-PS, DSM-CC and IP downloads
- USB, Ethernet, flash, tuner and other device drivers
- FAT-32 File System Driver for USB Mass Storage Devices
- Root Cause, Troubleshooting and Diagnosis of custom ASIC
- Direct Memory Access (DMA), MPEG Transport, Linux and QNX Device Drivers
- Multiprocessing, Inter-process Communication (IPC)
- SPI, I2C, RS-485, RS-232, USB, Ethernet and IPv4 communication protocols
- Embedded controller and electronics hardware
- Transmission lines, circuit design to eliminate reflection and noise

Realtime Control, Gainesville, Florida 1998-2001

Lead Electrical Design Engineer:

- Motorola 68302 based circuit design and HD-PLD logic for PCI adapter
- Windows Device Drivers and Applications with Visual Studio
- Electronics design of ISA and PCI circuit cards
- FPGA and programmable logic
- RS-232, RS-485 Electrical and Cable Design
- Schematic Entry, Component selection
- Static timing analysis

Automation Intelligence, Duluth, Georgia 1995-1996

Senior Software Engineer:

- Motor control Device Drivers
- Advanced Motion Language (AML) enhancements
- Robotics Control Systems and Applications

Cheshire Bridge Information Systems (CBIS), Norcross, Georgia 1993-1995

Senior Software Engineer:

- Windows NT TCP/IP, Network Device Drivers and NFS File Systems
- OS/2 Operating System, Device Drivers and Network Installable File Systems
- Windows ISO 9660 CD-ROM burner driver and application
- Windows and OS/2 Multithreaded Programming

Tiger Labs Corporation, Alpharetta, Georgia 1990-1993

Lead Electrical Engineer:

- 80186, 80286, 80386 and 80486 embedded and electronic systems
- 80186 based alarm system electronics and circuit design
- Real-time DES hardware and software encryption systems for IBM PC and PS/2
- Authentication, authorization and audit hardware and software solutions
- Root Cause Analysis, Resolution of countless technical issues, Troubleshooting
- x86 Assembly and C Programming
- Dynamic RAM and System Timing Analysis

IBM, Fishkill, New York 1988-1990

Engineer:

- Electron Beam Photolithography, Wafer Fabrication Process
- Robotics Control System to manage and feed wafers to Electron Beam System
- REXX, C, DOS and OS/2 applications
- Automated data collection system that saved each manager an hour per day

ADDITIONAL COMPETENCIES

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| • TI OMAP L138 C674x DSP devices | • TI DSP BIOS |
| • Satellite Communications | • Space Environment, Electrodynamics |
| • Oscilloscopes, Logic Analyzers | • Protocol Analyzers, Spectrum Analyzers |
| • RF Signal Generators | • JTAG Debug, In Circuit Emulators (ICE) |
| • Advanced Troubleshooting Techniques | • Debugging, Communication Protocols |
| • I2C, SPI, USB 1.1, 2.0 and 3.0 | • Scientific Experiments and Prototypes |
| • Presentation of Design Concepts | • Cadence, OrCAD and Eagle CAD/CAM |
| • Linux, Windows, VRTX, QNX | • Stress, Fault, and Performance Analysis |
| • Java, JavaScript, HTML | • Firewalls, Routers, Network Architecture |
| • Virtualization, VMWare, Hyper-V | • Windows Server, DNS, DFS, SMTP |
| • Team Foundation Server (TFS) | • Git, Subversion (SVN), CVS, Vault, PVCS |
| • Exchange, DAG, SQL | • Reverse Engineering |

EDUCATION

B.S. - Physics, Georgia Institute of Technology, Atlanta, Georgia

Including Mathematical Physics, Astrophysics and Optics

B.S. - Electrical Engineering, DeVry University, Atlanta Georgia

Including Digital Signal Processing (DSP) and Communication Systems

A.A.S. - Electronics, DeVry Institute of Technology, Decatur, Georgia

PUBLICATIONS

Rebello, D., et al. (2012). "On the sensitivity of the HAWC Observatory to gamma-ray bursts". Retrieved on June 18, 2016 from the Cornell University Library at <http://arxiv.org/abs/1108.6034>.

PROFESSIONAL ORGANIZATIONS

Institute for Electronics and Electrical Engineers (IEEE)

American Physical Society (APS)