Daniel Rebello
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PROFESSIONAL SUMMARY

Innovative and Articulate Senior Consultant with extensive leadership experience in product research, design, architecture, development and delivery of highly successful technology products.

CORE COMPETENCIES

- Project Leader and Mentor
- Data Analysis, Algorithms
- Analog and Digital circuit design
- Firmware, BIOS and RTOS
- Device Drivers
- FPGA, FPD, HCPLD programming
- RF, PSK, Q-PSK and QAM modulation
- TCP/IP, IPv4, IPv6
- Digital Signal Processing (DSP)
- MATLAB, Simulink and Mathematica
- Security, PKI, Cryptography
- Linux, Windows, VRTX and QNX OS
- Excellent Communication Skills
- Gamma Ray Bursts (GRB)
- Top level contributor for complex projects
- Requirements Capture, Architecture
- Microprocessors, ASIC, SoC
- Embedded Systems, Electronics
- Embedded and Real-Time Programming
- ABEL, HDL and VHDL
- Assembly Language, C, C++ and Python
- Ethernet, PON, EPON, WI-FI
- Schematic Capture, CAD, PCB Layout
- Stress, Fault, and Performance Analysis
- Space Environment, Electrodynamics
- System Analysis and Design, UML
- Project Management, Delegate
- Gravitational Waves, Astrophysics, Optics

PROFESSIONAL EXPERIENCE

Stream Server Laboratories / ARRIS, Boca Raton, Florida   2014-Present
Senior Principal Electrical Engineering Consultant:
- Algorithms to analyze natural phenomena, C and C++ Programming
- Bootloader Firmware, Secure Boot
- Lead Security Architect for gateway product
- Embedded System Electrical and Electronics Design
- IPv4 & IPv6 Network Stack, TFTP Network Server
- Linux Embedded Operating Systems
- Public Key Cryptography, PKI Encryption, Authentication, and Authorization
- 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
- Circuit design, schematic entry and PCB for above
- Gamma Ray Burst (GRB) analysis algorithms for NASA's Fermi Space Telescope
- Research, Gamma and X-Ray Radiation, Satellite Trajectory, Protection and Space Environment issues.
- Schematic Capture and PCB Design with Cadence Allegro, DxDesigner, OrCAD and Eagle
- Component selection

Cisco Systems, Lawrenceville, Georgia   1996–2014
Senior Staff Electrical Engineer and Technical Leader   2005-2014
- Led Bootloader development efforts across multiple projects
- Bootloader Firmware for SPARC and MIPS set-top
- Public Key Cryptography, Authentication and Vulnerability Assessment
- X.509, PKCS, ASN.1 and asymmetric cryptography
- RF Front-End Receivers, Tuners, Drivers
- Harmonic Spurious Emission Mitigation
- 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
- FAT32 File System Driver for USB Mass Storage Devices
- Designed custom MPEG and IP streamer
- Root Cause, Troubleshooting and Diagnosis of custom ASIC

Cisco Systems (formerly Scientific Atlanta), Lawrenceville, Georgia   1996–2014
Senior Staff Engineer: 2000-2005
- Led team responsible for sub-system common driver design and architecture
- Served as a cross-project interface to management, development and test teams
- Architecture, definition and design of real-time embedded systems
- Requirements capture and documentation
- Conducted weekly project status and design meetings
- Direct Memory Access (DMA), MPEG Transport, Linux and QNX Device Drivers
- Multiprocessing, Inter-process Communication (IPC)
- Lead Architect for embedded software on set-top products
- SPI, I2C, RS-485, RS-232, USB, Ethernet and IPv4 communication protocols
- DMA and MPEG Transport Driver Performance and Reliability Improvements

Scientific Atlanta, Lawrenceville, Georgia   1996–2014
Hardware Engineer: 1996-2000
- Embedded controller and electronics hardware
- CPLD and FPGA logic for DES encryption device
- ARTIC Real-Time Firmware and Drivers for Solaris and OS/2
- Electrical circuit to eliminate RS-485 reflection and cross coupling 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
- x86 Assembly and C Programming
- Dynamic RAM and System Timing Analysis
- Resolution of countless technical issues, Troubleshooting

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
- Resolution of technical problems related to wafer alignment and handling
- Development and testing of REXX, C, DOS and OS/2 applications
- Designed an automated data collection system that saved entire team of managers an hour each per day.

ADDITIONAL COMPETENCIES

- PC, Workstation and Server Design
- Oscilloscopes, Logic Analyzers
- In Circuit Emulators (ICE)
- Advanced Troubleshooting Techniques
- USB 1.1, 2.0 and 3.0
- MPEG, H.264
- Presentation of Design Concepts
- Selection of Test and other Equipment
- Protocol Analyzers, Spectrum Analyzers
- JTAG Debugging
- Debugging, Communication Protocols
- Scientific Experiments and Prototypes
- DVI, VGA, NTSC, PAL and DisplayPort
- Cadence, OrCAD and Eagle CAD/CAM

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)