# **Curriculum Vitae of Miguel Gomez**

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Mr. Gomez has thirty nine years of experience in the design and development of hardware and software technology used in telecommunications, data communications, networking and storage infrastructure. He also is highly skilled in the use of microelectronics simulation software, ASIC & FPGA coding and Verilog. Mr. Gomez has designed and coded digital switching, optical encoders, and semiconductor memory hardware and software.

# Expertise

- ASIC & FPGA Design
- Computer Architecture
- Computer Buses, Cache, and I/O
- Hardware Emulators
- Hardware Programming Languages
- Hardware Verification & Test
- Software Programming Languages
- Network Protocols
- Telecom Protocols
- Storage, Raid Controllers
- Digital Switching Technology

- Modems
- Security in place, security in motion
- Compression Algorithms,
- Optical Encoders
- Video Capture and Display Systems
- Semiconductor Memories
- Power supply design
- Power Inverter design.
- Computer Vision

# **Consulting Areas**

#### Computer Architectures

- Data General
- IBM PC
- MIP 3000, 4000
- Intel 8051, x86, Pentium II
- Motorola 68000
- TI TMS320Cxx (DSP)
- PowerPC

#### Computer Buses:

- USB
- I2C
- PCI
- ISA
- EISA
- PCMCIA
- SBUS
- VME
- S100

## Hardware Programming Languages:

- PALASM
- ABEL
- AHDL
- VHDL
- Verilog

#### Hardware Simulation and Compilation

- Synopsys VCD
- Synplicity
- ModelSim
- VerilogNC
- Spice, Hspice

## ASIC and FPGA Design:

- Actel
- Altera
- Xilinx

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## **Networking Protocols:**

- ATM
- TCP/IP
- Ethernet
- VOIP
- HTTP/HTML

## Software Programming Languages:

- C,C++
- BASIC, VISUAL BASIC
- Assembly and Machine Languages
- FORTRAN
- Java
- Pascal
- Python/Django/bootstrap

## Operating Systems:

- MSDOS
- Windows 3.1/NT/9x/2000/XP/CE
- UNIX

## Communications

- Spread Spectrum (802.11a,b,g,n)
- LTE
- ODFM
- RF Transmission and reception

#### **Power Electronics**

- Solar Inverters
- 3-phase motors

## **CAD Tools**

- Max+Plus II, Quartus (Altera)
- XACT, ISE (Xilinx)
- Mentor
- Orcad
- Allegro
- Viewlogic
- Schema
- P-Cad

## Hardware Emulators

- Quickturn
- Ikos
- Zycad

## Computer Memories

- SDRAM
- Rambus
- DDR I,II
- SDR

#### Compression:

- ADPCM
- H.264

# Education

Year College or University
1983 Yale University

Degree BSEE



# **Engineering Experience**

From: April 2013 To: Present

Organization: Rockslide Analytics, LLC.

Title: CEO

Summary: Mr. Gomez founded Rockslide Analytics in order to develop and eventually sell a

depth sensing camera. A depth sensing camera can image a scene in three dimensions. Currently Rockslide Analytics is also used to promote Mr. Gomez's

consulting and expert work.

From: August 2006
To: March 30, 2009
Organization: ActSolar Inc.

Title: VP Engineering and System Architect

Summary: Mr. Gomez has designed and built a 400 watt power inverter which takes an input

voltage of 30 volts DC and converts it to 240 VAC. Included in the design is an energy compensation circuit that recovers up to 40% of power normally lost due to power factor correction issues. Included as part of the inverter system was rooftop data collection for power and temperature with wireless connections to cloud

management services.

ActSolar was sold to National Semiconductor Corp. on March 19, 2009.

From: September 2004
To: August 2005
Organization: BridgeWave Inc.
Title: Consultant

Summary: Mr. Gomez built a 10 gig Ethernet test platform to facilitate manufacturing tests of

Bridgewave's high speed wireless network system. This system replaced the Smart

Bits Ethernet test analyzer in the manufacturing test environment.

Built test generator: Ethernet packet generator which generated packets of

various sizes, address spaces, payload and checksums.

• Built test receiver and analyzer which detected various failure mechanisms, maintained statistics and reported them to a user interface written in Lab

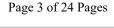
View.

• Used the Xilinx Vertex II in the 2003 version. Used Xilinx Spartan 3e in

2004 version.

From: September 2004
To: September 2004
Organization: PA Consulting Group

Title: Consultant





Summary:

Miguel Gomez has provided hardware evaluation services for corporate mergers and acquisitions. These services include systems and hardware reviews in the following areas:

- Analysis of system performance to cost of the hardware implementation.
   Costs include development time, flexibility of the system for future growth and final product costs.
- Review of the VHDL and Verilog code implementations, documentation and development strategies.
- VHDL and Verilog code management including compilation processes, simulation, test coverage, bug tracking and source code control.
- FPGA and ASIC tool chain management.
- Circuit board design and layout for production environments
- Circuit board certification testing for FCC, UL, and Environmental tests
- Review of production line management including assembly and test processes.

From: Jan 2003
To: May 2003
Organization: Santel Networks
Title: Consultant

Summary: Mr. Gomez Developed an optical duo-binary (ODB) encoder. At 10.7 Giga bits per

second (GBps) ODB reduces the spectral spread to ½ of the ordinary NRZ format. This format allows high spectral efficiency over long distances by reducing nonlinear penalties due to narrower channel spacing and allows a higher bit rate or increases transmission distances. The project was implemented in a Xilinx FPGA running at 667 Mbs with a 10.7 GHz Mux/Demux feeding 16 LVDS streams to the FPGA. The ODB behavior was simulated in a C-coded simulation. The circuit board's highest clock speed was 10.7 Gigahertz and was modeled in HSPICE. Board level simulation was performed using NCVerilog. Several Patents were applied for and the board was shown at the Optical Fiber Communication Conference & Exposition in March of

2003.

From: March 2001
To: December 2002
Organization: Extreme Networks, Inc.

Title: Director of Hardware, Content Networking Division

Summary: Mr. Gomez managed a team of Hardware and Software engineers, which developed

and maintained a Layer 5 Content Addressable Switch. The switch is capable of L2, L3, L4 switching as well as L5 switching which uses HTTP headers to make routing decisions. All routing decisions were made in real time (1 GBPs) by hardware in FPGAs while a Power PC provided a user interface, configuration management and housekeeping diagnostics. Communications between the hardware elements and the

PowerPC CPU was via a PCI bus.

From: January 2000 To: March 2001

Organization: Webstacks, Inc. (Now Extreme Networks, Inc.)

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Title: Director of Hardware

Summary: Extreme Networks and several venture founding partners commissioned Webstacks to

build a Content Addressable Switch. As the number four employee Mr. Gomez was hired to be the system architect and to in-turn to hire the hardware team which would implement it. He hired 13 ASIC, FPGA and software engineers into his department and managed them for the duration of the project. Time to development was one year and at that time functionality was proven to Extreme, which then bought Webstacks for

\$68MM cash and stock.

From: February 1997
To: December 1999
Organization: Philips Semiconductor

Title: Consultant

Summary: Developed the certification environment which was used by Philips

Semiconductor and Microsoft to verify operation of Philips' Poseidon handheld chipset running Windows CE. This included board development, FPGA coding

and simulation as well as porting Windows CE.

• Supported development of Philip's version of the Mips 4000 along with several of the peripheral devices that made up the system on a chip and the bus

interconnect.

Miguel Gomez also developed the ASIC logic and board level hardware for a

56Kbs software modem while at Philips.

From: September 1994
To: January 1997
Organization: Minden Group, Inc.
Title: President & Founder

Summary: After founding The Minden Group, Miguel Gomez developed several types of

memory adapters used to adapt various sizes and types of memory sticks into Personal Computers. These were sold through retail stores throughout the nation. Over 250,000 memory adapters were sold at stores such as Fry's, CompUSA, Computer City and Future Shop. Miguel Gomez also designed a video conferencing system including a low cost video capture board and modified drivers. This system was also

sold through the retail channels.

After developing these products he organized and managed a small team of 10 to 15 product managers and sales personal. Manufacturing was done in Taiwan with final

assembly and distribution in the United States.

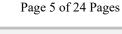
From: April 1989 To: August 1994

Organization: Spectrum Analysis, Inc. Title: Founder & President

Summary: Consulting services company, which Mr. Gomez founded and operated with three

other partners. Specialized in electrical circuit design with emphasis on ASIC, FPGA and ASIC emulation and complex PCB level designs. Responsibilities as founder were to identify specific business opportunities as well as to manage and implement portions

of the technical projects.





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