William T. Ross (Bill)

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Demonstrated Skills:

Hardware: Digital, Analog, Programmable Logic, Altera Quartus / Stratix / Cyclone, VHDL, ModelSim, FPGA, ASIC, PCB, Lab skills, PCI, USB, EMI, Low Power, Debug skills, Test methodology, Verification, high speed PCB layout guidelines

Processors: MIPS, ARM, Allwinner H5, Amlogic S912, Coldfire, x86, DSP5600x, 805x, PIC, MC68xx(x), Nat'l HPC...

Operating Systems: Windows App / Drivers, Linux App / Drivers, VxWorks, MicroC/OS, (program): VxWorks, None (bare metal) …

Protocols: Ethernet (stack), SIP, USB, SPI, I2C, PCI, ...

Software (Assembly): MIPS, ARM, PIC, 805x, MC68xx(x), Vax 11/780, 80x8x, Nat'l HPC, DSP5600x, ARC, ...

Software (High Level): "C", "C++", Basic, Visual Basic, Fortran, VHDL, PHP, Python, Java

Specialty: Embedded Linux, OpenWrt, Real Time F/W, Drivers, W95/8, NT, W20XX, VxWorks, Linux, FPGA

Systems: Specification, H/W, F/W, S/W Design Partitioning, Protocols, Interface specification, Implementation, optimal cost solutions.

Applications: PC, MAC: Excel, MS Word, PowerPoint, Orcad, Altera Quartus, Simplify, ModelSim, Spice, Visual C++/MFC, Windriver, DreamWeaver...

Other: Technical Representative for Northern Telecom (Nortel) at various international standards meetings (ADSI, CLASS, USB ...), Project Leadership, Project Estimation, Technical Lead, Excellent writing and communication skills, Exceptionally quick learner.

Corporate Resources: Modern H/W, F/W and S/W development tools, test equipment, relationships with suppliers and subcontractors such as PCB layout, Turnkey development.

Career Experience:

July 2019-Present   Bill Ross Enterprises Ltd. Self Employed, working on private endeavors involving OpenWrt as below.

Dec. 2018-June 2019   Heroic Technologies Inc (Privacy Hero). Key developer killed in accident completely stalling development / beta trial. Product source code (some encrypted), design notes, build scripts inaccessible. Recreated (by reverse engineering) original Ubuntu (Nano Pi NEO2, Allwinner H5, ARM Cortex A53, Python) based product. Ported product to OpenWrt, replacing Ubuntu. Ported Mender (OTA software updates) to OpenWrt, allowing complete remote OS / software updates). Various u-boot changes. Ported product to Amlogic S912 based TV box for improved performance / costs. Assisted in system integration, refining application client / server API for new features.

2014-Nov. 2018   Bill Ross Enterprises Ltd. Self Employed, working on private endeavors involving OpenWrt (embedded Linux, drivers, applications) which are part of product offerings for security, home control markets. Details at www.rossco.org, (website also demonstrates PHP, writing and website skills).

2012-2013   Flextronics for Avaya Inc (contract). Meridian / Norstar phone line was becoming un-manufacturable due to custom silicon (ugh, no HDL, hand design) which modern foundries could no longer manufacture. Job was to modernize, re-partition design, to replace / virtualize silicon (analog / digital) with modern DSP and digital functions, while maintaining firmware compatibility, which also required a third party to translate firmware from assembly to C. A significant cost reduction was also achieved.

Interspersed with other minor FPGA, Linux driver, C++ assignments.

2010 – 2011   Avaya Inc (former Nortel, contract, via Flextronics). Rescued program at serious schedule and cancellation risk due to real time, hardware, tools issues plus driver bugs (Coldfire V1 processor) and to train team in debug skills. Very happy customer.

Interspersed with other minor FPGA, Linux driver, C++ assignments.

2001 – 2010   Flextronics (contractor) Various HS FPGA designs, Embedded Linux, FPGA PBX, CODECS, PWM, Embedded F/W.

Mitel: (via Flextronics): Various Turnkey H/W, S/W phones / peripherals / drivers. Embedded Linux (SIP Phone, drivers, Real Time, C/C++, BSP)

Nortel (via Flextronics): FPGA PBX, CODECS, PWM, Embedded F/W

1997 – 2000:   (Contract) Mosaid Technologies. Designing 66/133 MHz customer reference designs for their specialty CAM's (Content Addressable Memories) involving

System spec/design Quartus FPGA's, PCI, USB, PCB, PC drivers. Responsible for 3rd party (myself) qualification of Mosaid ASIC's which involved (Altera Stratix FPGA's) creating a 256MHz, 256-bit wide RISC processor, running test cases created with the M4 macro language.

1986 –1996:   Nortel Networks (11 years), Individual Contributor, Technical lead for terminals division. Major accomplishments include Very first Computer / Telephony integration (PCI card) allowing computer monitor / control of Meridian / Norstar PBX's. System architecture / technical lead for Vista terminal line. Very first, still best performing Call waiting ID (FSK burst during analog call) ASIC for analog phones. Reason for Leaving Nortel: Decided that if Nortel could profit with their unproductive overhead, I could personally do much better, work far more interesting (varied) and I could be much more effective doing things "the proper way". Became self-employed, started Bill Ross Enterprises, Ltd.

1982 – 1985:   Norpak Ltd (3 years) Project Leader, Sr. Design Engineer. Highlights include designing the very first Teletext (Closed Captioning) decoder ASIC which (patented IP) is still used in most television sets today. Lead designer for various single board (M6809) computers, graphics firmware, OS9 systems.

Patents:

1995, US #5436590 "Digital FSK Demodulator with Automatic Offset Cancellation"

1997, US #5615257 "Screen Based Telephone Set for Interactive Enhanced Telephony Service" (Vista Terminal Architecture).

Academic Record:

University of Waterloo, Waterloo, Ontario, Canada

Degree: BSEE - Electrical Engineering

Major: Semiconductor Physics, Control Systems

Devry Tech., Toronto, Ontario, Canada

Degree: One year of Electronics Technology program

Too easy. Left to prepare / save for university

Pauline Johnston CVS, Brantford, Ontario, Canada

Diploma: Secondary School

Major: Science and Technology

Hobbies and Interests:

Electronics, Politics, Economics, Philosophy, Skiing, Travel, Camping

Character:

Resourceful, honest, frank, goal driven, diligent, self-starter / management, curious, quick learner, failure is not an option.

References:

Available upon request.