JODIE MACEACHERN

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Embedded Software Developer

A hard working Electronic Engineering Technologist and Software Developer with over 25 years experience working on a multitude of platforms, programs and operating systems. Always current, with a strong interest in the Technology field. I have extensive professional development and demonstrate high levels of competency in the design, testing, troubleshooting and quality assurance of new hardware and software.

I am an experienced design lead and can inspire others to produce their best work via virtual or remote settings.

TECHNICAL EXPERIENCE

Microprocessors

Mitsubishi M50747, Motorola MC9S12E128, Motorola MC9HC16, Motorola MPC860, Motorola MCF5272, Motorola MC56F8356, Zilog Z180, Z8 Encore, STM32F101 (ARM Cortex-M3), STM32F777 (ARM Cortex-M7) SAM3u4C (ARM Cortex-M3) ATxmega128A4U, nRF52, EMF32TG

Operating Systems

FreeRTOS, pSOS, uClinux, UCOS-II, Quick Task, QNX

Compilers

Softtools, Diab data compiler, Watcom C /C ++, IAR, GNU C compiler

Languages Used

C, C++, Python, Java, Pearl

Hardware Tools Used

Spectrum analyzers, Oscilloscopes, Emulators, Debuggers, Logic analyzers, Protocol Analyzers

Software Tools Used

Perforce, Git, Code Collaborator, Pivotal Tracker, Extraview, doxygen, eclipse vim, emacs, pc Lint, splint, STM32Cube, GNU make, GDB, IAR Debugger, Atmel Studio

CAREER HISTORY

Enginuity Inc 2019 - Present

264 Herring Cove Rd, Suite 100
Halifax, Nova Scotia
B3P 1M1

Senior Firmware Developer

- Developed Firmware for a Low powered health monitoring Bluetooth Device
- Wrote software technical documentation
- Developed both client and server using an embedded STM32 BlueNRG1

- Developed Android app for testing Bluetooth

- Developed special firmware for FCC Testing and verification

- Developed inventory Database and front end using PHP

- Developed IOT Application on Raspberry pi

  - Wireless configuration
  - USB Connected to device that monitored and controlled Grow equipment
  - Devices were controlled using "Thingsboard"
  - Developed Special Widgets using NodeJS on Thingsboard

- Developed Firmware for a low powered IOT device

- Connected to **LTE-CATM1 / NB1** mobile network using u-blox **SARA-R410** module

- Used a self hosted **Docker** image running on our own server.

- Used **MQTT** and **HTTP** API calls to the Thingsboard server for reporting and control.

- Installed and managed certificates using letsencrypt.org

NewAE Technology Inc 2017 - 2018

1083 Queen St., Suite 196
Halifax, NS.
B3H 2R8

Senior Embedded Software Developer 2017 - 2018

Responsible for the software design testing and documentation of a electromagnetic fault injection device.

- Firmware for the ChipSHOUTER.
  - https://github.com/newaetech/ChipSHOUTER
- Python application to programmatically interface with the ChipSHOUTER.
  - https://github.com/newaetech/ChipSHOUTER-python
- Firmware for the ChipSHOVER XY Table using FreeRTOS.
- Encrypted Firmware Upgrade.
- Developed a method for verified NewAE and Community Upgrades.
- Python software test scripts.
- Hardware test scripts interfacing to a PicoScope for voltage measurements.
- Linux Kernel module to test hardware IO timing.
- Simple Django web site used for serving Firmware updates.
- Create sqlite database for firmware updates.

Digital Security Controls (Tyco Safety Products) 1994 - 2016

3301 Langstaff Road
Concord, ON
L4K 4L2
(Based Remotely in Truro, NS since 2005)

Positions Held:

Senior Embedded Software Architect 2012 - 2016

- Responsible for the overall Embedded Software Architecture of the Power Neo Security System.
- Implemented embedded virtual keypad on existing communicator product.
- Lead team on modular scalable design of embedded firmware.
- Responsible for leading, documentation, and coding.
- Collaborated with developers Winnipeg, Toronto, Italy and Israel.

Embedded Software Analyst Level 4 2001 - 2012

- Design, implement, testing and debugging of embedded software applications.
- Prepared design proposals to reflect costs, time and alternative actions to satisfy existing/future needs.
- Prepared feasibility studies, software design specifications, test plans, protocol specifications.
- Reviewed hardware and mechanical specifications, drawings and schematics and provide feedback.
- Identified, analyzed and resolved complex software inadequacies.
- Participate in, organized and/or ran product development meetings, design reviews and code reviews.
- Prepared time estimates, assisted in reviewing and finalizing project schedules, ensured assigned projects followed schedule.
- Participated in Compliance, Approvals, ATE and EFT with any necessary software support.
- Provided technical guidance to more junior staff, and work as project or team leader.
- Assisted with evaluation and testing of software and hardware tools. Developed methods, metrics, techniques and evaluation criteria for algorithms, products, processes and staff.

Design Group Manager 2000 - 2001

- Managed a group of 8 junior and senior developers.
- Responsible for entire design process, both hardware and software.
- Conducted Employee reviews.

Software Manager 1999 - 2000

- Managed 5 developers both junior and senior.
- Oversaw Coding Standards, High and Low level Designs, and assisting in all parts of the design.

Embedded Software Developer 1994 - 1999

- Developed, debugged, troubleshoot hardware integration.
- Software development using Embedded C and Assembly language
- Developed low-level Ethernet drivers QNX Development with TCP/IP Real Time OS pSOS, and Quick task.
- Designed embedded software for alarm communication receivers over POTS lines.
- Conducted feasibility with Linux kernel for the MPC860 on a MBX860 evaluation board.

Embedded Software SQA 1994 - 1995

- Tested embedded software for security panels.
- Developed test equipment using the Z8 micro controllers.
- Tested R.F. devices used for security panels.
- Used equipment such as oscilloscopes, logic analyzers, spectrum analyzers, and emulators.

EDUCATION

Online Linux Academy (2016)

- Night School
- Seminars & Training
- CompTIA Cloud Essentials Certification
- Git Quick Start
- Vim - The Improved Editor Linux Essentials Certification
- DevOps Essentials
- Boot loader with GRUB
- Learning Python 2.7 Development
- AWS Concepts AWS Essentials

Humber College (Ontario):

- Unix Internals - 2004
- Intermediate Java - 2001

Seneca College (Ontario):

- Introduction to C++ - 2004
- Advanced C - 1998

- Introduction to Object Oriented Analysis and Design - 1998

Misc

- Thingsboard.io Online Training **2019**
- Statistical Process Control (John McConnell) **2005**
- uClinux (System Design & Consulting Services) **2002**
- Introductory VHDL (Technically Speaking) **2001**
- Intermediate VHDL (Technically Speaking) **2001**

College and High School

Radio College of Canada 1992 - 1994

North York, ON

- Electronic Engineering Technologist
- Electronic Technician

Nova Scotia Community College 1991 - 1992

Stellarton, NS

- Electronic Technician

High School Graduation 1991

New Glasgow
- New Glasgow High School