Mohammad (Max) Sobhani, B.Sc., M.A.Sc.

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Summary of Qualifications

- M.A.Sc. in Electrical Engineering
- 3+ years of experience in designing digital, analog, and mixed signal circuits
- Experience in developing project plans and following them through
- Hands on experience with lab test equipment, strong lab verification and debugging capability
- Ability to work both independently and in a team
- Eager to take initiative and responsibility in a team environment
- Able to take charge of a situation and see it through to resolution

Technical Skills

- **Digital and Mixed Signal Circuit Design**
  - Experienced in schematics and PCB design in well known design software suites. (More on Page 2)
  - Design of mixed signal systems incorporating interface technologies such as USB, SPI, I2C, SDRAM, UART, Parallel
  - Working experience with Microcontrollers, DSPs, DC-DC converters, Flash Memories, EEPROMs, analog filters, LCD Displays, and Ethernet Controllers.
  - Extensive knowledge on the architecture of PIC18, PIC24, and PIC32 Microcontrollers and C5000 DSPs
  - Cost-efficient design without affecting the circuits accuracy and reliability requirements
- **Firmware Development for a Variety of Microcontroller Families**
  - Deep knowledge of embedded firmware development using C, Assembly languages
  - Experienced with Microchip's PIC, and Atmel's AVR Microcontrollers and TI C5000 Family of DSPs
  - Competent in using all the peripherals including Ethernet (using TCP/IP Protocol) and USB ports
  - Experienced in firmware development for 8bit, 16bit, and 32bit Microcontrollers and DSPs
  - Design of remote controlled and network based control systems with the use of TCP/IP Protocol

Experience

- **Arshon Silicon Technology Inc. (Astinco), Markham, ON**
  - *Circuit Design Engineer* **2009 – Present**
    - Assumed responsibility for average of three projects in different development stages at any time
    - Reliable and detail-oriented design of mixed signal and digital circuits
    - Experienced in designing with Microchip's PIC32 and PIC18 Microcontrollers and TI's C5000 DSPs
    - Made use of interfaces and peripherals including SPI, I2C, USB, UART, Ethernet, and Parallel
    - Designed DC-DC Converter and linear power supply circuits
    - Developed sophisticated Network-based firmware using TCP/IP Protocol
    - Successfully developed Cooperative multitasking firmware for task-intensive devices
- **McMaster University, Hamilton, ON**
  - *Research Assistant*, Communications Research Lab (CRL) **2006 – 2008**
    - Researched on electronic and telecommunication devices and simulated the designed devices
    - Gained valuable programming skills in C/C++ and MATLAB
    - Contributed to outstanding team work in the simulation of complex devices
  - *Teaching Assistant* **2007 –2008**
    - Assisted in Electrical Engineering Courses including Electronic Devices and Circuits II
    - Passionate and Consistent team work with other teaching assistants
- **Sazgar Rayaneh Shiraz, Shiraz, Iran**
  - *Process Control Engineer* (Co-Op) **2003 – 2005**
    - Designed reliable electronic boards of control equipment in a CD manufacturing site
    - Constructive communication with other staff on site in addressing equipment issues

Software Skills

- **Hardware Design Tools**
  - Altium Designer 10
  - Cadence OrCAD 16.3
  - PADS Suite 9.2
  - VHDL
- **Firmware Development languages and suites**
  - **Languages:** C/C++, Assembly, Basic
  - **Suites:** MPLAB 8.70, CCStudio v4.2, AVR Studio 5
- **Programming Languages**
  - C/C++/ C#
  - MATLAB
  - PHP
  - MySQL
- **General Software**
  - Microsoft Office
  - Adobe Photoshop
  - Microsoft Visio
  - AutoCAD

Education

- **Master of Applied Science in Electrical Engineering (GPA: 93.75%)** **2006 – 2008**
  McMaster University, Hamilton, ON
  - Received full departmental scholarship
- **Bachelor of Science in Electrical and Electronics Engineering (GPA: 95.75%)** **2001 – 2005**
  Shiraz University, Shiraz, Iran
  - Received three departmental honorary awards in 2002 – 2004 as the first ranked student
  - Received three university honorary awards in 2002 – 2004 as an exceptionally talented student

Activities

- **Planning Committee Chair, Canadian Red Cross (Branch Council), Hamilton, ON** **2009 – Present**
  - Prepared and presented the annual operating plan to the Branch Council President
  - Partnered with staff to set priorities and objectives for the branch

Recent Projects (Detailed Portfolio Available at: http://www.mhsobhani.ca/portfolio.php)

- **Internet Based Audio Power Manager (Hardware Design and Firmware Development)**
  - Designed the display board containing Microcontroller, EEPROM, LED Controller, Graphical LCD, etc.
  - Developed the FTP boot-loader for the product for in-market update capabilities
  - Developed the Firmware for the device as part of the firmware development team
- **Industrial Precision Vibration Meter (Hardware Design and Firmware Development)**
  - Made use of Serial and parallel Flash memories, EEPROM, DC-DC Converter, Li-Ion Battery Charger IC, Digital Accelerometer, and TI's TMS320C5515 Low-Power DSP in hardware design
  - Incorporated a Hardware/Firmware Protection device to protect the intellectual property rights
  - Wrote a Cooperative Multitasking Firmware that made use of I2C, SPI, and UART communications.
- **All-in-one hardware for several Geothermal Heating and Cooling Systems (Hardware Design)**
  - Managed 86 Analog and Digital I/O with multiple voltages and logic levels with a single MCU
  - Made use of precision stepper motor drivers for controlling electronic expansion valves
  - Designed for BACnet® Network communications and for serial communications with PC Software
- **Functional Test Jig for validating Astinco's Single Phase Energy Meter boards (Hardware Design)**
  - Interfaced with PC using the USB port and with the Energy Meter using Serial Port
  - Performs many hardware and functional tests on the Energy Meter Boards
  - Rugged design with extra ESD protection optimized for use in production line environment
- **Network-Based Voltage Reduction Energy Management System (Firmware Development)**
  - Updatable weekly schedule and other settings in web-pages over Ethernet using TCP/IP Protocol
  - Use of SNTP servers to retrieve time from the network periodically for timing accuracy
  - Logged data after each event and emailed it to the adjustable user email using SMTP server