

# BOWEN SONG

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## EDUCATION

09/2017-08/2019 **Boston University (BU)**, Boston MA, USA

- ✧ M.S in Electrical and Computer Engineering
- ✧ Core Courses: Project Design, Data Structure, DSP

09/2012-08/2017 **University of Victoria (UVic)**, Victoria BC, Canada

- ✧ Bachelor of Engineering in Electrical and Computer Engineering
- ✧ Last Sessional GPA: 8.00/9.00
- ✧ Core Courses: Digital Signal, Image, and Video Processing, Optimization, Control System Design, Error Control Coding, Pattern Recognition, Wireless Communication, Radar

## WORK EXPERIENCE

**University of Victoria**, Victoria BC, Canada 05/2017-08/2017

*Undergraduate Researcher and Entrepreneur, Department of Electrical Engineering, Propagation Laboratory*

- Implemented SDR Radar System with DSP enhancement;
- Focusing on LFM Radar and Time Compression-Overlap Add DSP technique.

**HELLA Innenleuchten-Systeme GmbH**, Wembach, Germany 01/2017-04/2017

*Electrical Engineering Praktikant, Department of D-LAB (Light Lab)*

- Investigated Light Guide spectrum and effect of production with NO<sub>2</sub>;
- Developed software for managing company resource capacity;
- Designed RGB module testing system and procedure for pre-series production.

**IBM Canada**, Victoria BC, Canada 05/2016-08/2016

*Software Developer, Department of Technology Engineering Service*

- Developed software alongside a team and enlisted in life cycles of multiple software development process including sprint planning, implementation, and bug-fix maintenance;
- Created IBM Lotus Notes/Domino Reader, and scheduled Maximo Database Tracker.

**Western Digital Corporation**, Ayutthaya, Thailand 09/2015-10/2015

*Student Trainee, Firmware Laboratory*

- Worked with product testing team on product firmware reliability tests and focused on designing software program replacing manual firmware update testing procedure;
- Created Automated Product Firmware Update Testing Software.

**Metallurgical Corporation of China (MCC)**, Shanghai, China 05/2011-09/2011 & 2012

*Engineering Assistant*

- Assisted Engineers with AutoCAD drafting of mechanical drawings and print-outs;
- Applied technical knowledge to innovate, design and develop processes, tooling, assembly fixtures and procedures.

## PROJECTS AND RESEARCHES

**Distributed-Computing Environment (Python & JAVA)** 09/2017-12/2017

- Lead a team of 7 and created web application that allows users to borrow laptops for their computation needs;
- Incorporated Swam, Docker, AWS Server, MongoDB, FTP, and Socket, and implemented in Python and Java;
- Released the first stable version on GitHub, capable of handling demanding algorithms.

**N-Gram Language Checker (JAVA)** 09/2017-12/2017

- Created a Java application capable of recognizing grammar and spelling mistakes for multiple languages;
- Chose N-gram model and Hash maps data structure with implementation comparison;
- Improved training process to handle over gigabytes of text file and output megabytes of trained model.

<b>Enhanced LFM Radar (MATLAB &amp; Simulink)</b>	05/2017-08/2017
<ul style="list-style-type: none"> <li>➤ Developed low power LFM Radar with SDR for aerial vehicle management system in a team effort;</li> <li>➤ Cooperatively investigated novel N-signal enhancement by combining multiple known radar waveforms;</li> <li>➤ Implemented TC-OLA DSP improvement;</li> <li>➤ Experimented Doppler effect cancellation scheme.</li> </ul>	
<b>LIN Communications and Product Quality Control (CANoe)</b>	03/2017-04/2017
<ul style="list-style-type: none"> <li>➤ Developed Body Control Modules for RGB module over Vector CANoe with CAPL;</li> <li>➤ Designed automated Quality Control testing system;</li> <li>➤ Investigated LIN BUS Network Communication.</li> </ul>	
<b>Capacity Managing Software (C++)</b>	01/2017-02/2017
<ul style="list-style-type: none"> <li>➤ Developed C++ program for managing company resources and designed custom server database;</li> <li>➤ Created user friendly collaboration system.</li> </ul>	
<b>IBM Lotus Notes Reader (VB.NET)</b>	05/2016-08/2016
<ul style="list-style-type: none"> <li>➤ Monitored IBM notes email and updated data base;</li> <li>➤ Continued the revived project starting from gathering changed new requirements to design and develop the program till publication.</li> </ul>	
<b>Automated Product Firmware Update Testing Software (VB.NET)</b>	09/2015-10/2015
<ul style="list-style-type: none"> <li>➤ Developed firmware product testing software with help from supervisors and co-workers inside Firmware Lab;</li> <li>➤ Designed a C++ program to replace manual involvement in branded product reliability testing, which built multiple connections for controlling and monitoring the unit under test;</li> <li>➤ Followed testing procedure, recalibrated UUT during error incidents, and reported testing result.</li> </ul>	
<b>Automated Cell Image Segmentation and Edge Detection Algorithm (MATLAB)</b>	2015
<ul style="list-style-type: none"> <li>➤ Customized segmentation algorithms to isolate overlapped cells in Pap smear image;</li> <li>➤ Acted strictly according to the following three steps: 1. enhance the characteristic of nucleus and cell edges with Bi-group enhance approach; 2. trace the contour of cell edge with Cytoplasm Contour Detection Approach; 3. trace the contour of nucleus edge within each cell with Nucleus Contour Detection Approach.</li> </ul>	
<b>Smart Campus Design and Development for Natural Disaster (GIS)</b>	2014
<ul style="list-style-type: none"> <li>➤ Assessed and improved emergency response system of University of Victoria with alarming system and escape plan.</li> </ul>	
<b>Pulse-Width-Modulated Signal Generation and Monitoring System (C Assembly)</b>	2014
<ul style="list-style-type: none"> <li>➤ Developed an embedded system with microcontroller to monitor and control a PWM signal generated by NE555 IC external timer.</li> </ul>	

## EXTRACURRICULAR ACTIVITIES

<b>Global Community Mentorship</b>	09/2014-05/2015
<i>University of Victoria Global Community Mentorship Program</i>	
<ul style="list-style-type: none"> <li>➤ Helped the students prepare for the culture shock and language barrier as the mentor in the mentorship program.</li> </ul>	
<b>The Mustard Seed Hunger Fighting</b>	09/2013-05/2014
<i>The Mustard Seed Street Church</i>	
<ul style="list-style-type: none"> <li>➤ Prepared and served food on weekends for people in need.</li> </ul>	

## SKILLS & HOBBY

**Equipment:** Oscilloscope, Multi-meter, Signal Generator, Logic Analyzer, USRP transceiver, Spectrometer

**Programming Languages:** C, C#, C++, C Assembly, MATLAB, HTTP, VB.NET, Python, CAPL, JAVA

**Operating Systems:** Apple OS, Windows XP/7/10, Linux, Android

**Software:** Eclipse, R, MEFiSTo, Visual Studio, Wireshark, PuTTY, DB2, IBM Domino, MAXIMO, MATLAB, GNURadio, Xilinx, MS Office Suite, iWork, LT Spice, CANoe, Trello, Docker

**Hobby and Certificate:** Municipal TaiChi Master; Level 10 Piano Certificate; Olympic Second Level Swimmer; Triathlon Enthusiast; Occupational First Aid Level 1; APEGBC Student Member.