# Weipu Zhao

Phone: +1 778-926-1096 email: weipuz@sfu.ca

## Summary of Skills

Intermediate: Python, c++, Matlab, Java, hadoop, Labview
Basic: Linux, arm, mysql, Drupal, LaTeX, php, html

## Work Experience

**Sep 2014-Dec 2014** | **Teaching Assistant of CMPT128**, *Simon Fraser University, Burnaby, BC,Canada*

- Course name: Introduction to Computing Science for Engineer Students, from Dr. Janice Regan;
- Assistant the instructor in weekly C++/C programming Lab, responsible for answering questions of about 60 students during the lab;
- Testing the instructor's auto-grading software system for the course. Finished several grading tasks including two quizzes and two assignments on time.

**Feb 2014-Jun 2014** | **Software Engineer Intern**, *BaianTek Co. LTD., Shanghai,China*

- Responsible for the development and optimization of several engineering software used in the Distributed Fiber Optical Sensers;
- Re-develop the PC control software of Mini-EDFA under Labview environment. Finished on a very short deadline;
- Add specialized Spectrum analyze module in the existing Fiber Distributed Temperature sensing system(DTS) software monitoring software under VC environment;
- Researched and developed the signal processing and classification techniques of the Fiber Distributed vibration sensing system(DVS).

**Feb 2013-Sep 2013** | **Assistant Software Engineer**, *Pipeline R&D Center, Langfang, Hebei, China*

- Work at the Mechanical Automation Institute of PetroChina pipeline R&D center. Mainly responsible for the research of the pipeline leak detection software system;
- In charge of one cooperated project worth 400K CNY between my lab and the company. Design and implement novel algorithms to detect weak pipeline leak signals;
- Responsible for the integrate and implementation of the algorithms I designed to their systems in both Labview and C# environments during the final stage of this project;
- Completed 6 monthly reports and one midterm evaluation report, finished software development documents on time and passed the final examination hold by the sponsor.

## Highlight Project Experience

**Sep 2014-Dec 2014** | **Map-Reduce implementation of Find Frequent Itemsets**, *Course Proj. of DataMining*

Key words: Hadoop, Java, map-reduce, association rule;

- Implemented java based map-reduce program to find frequent itemsets in transaction database. Designed two map-reduce function as implementation of SON algorithm;
- Novelly override the default inputformat class and make it more suitable for this application. The program is running smoothly and get full credit in the project and get A in the final grade.

**Sep 2014-Dec 2014** | **Python Implementation of Chinese-English Translation System**, *Course Proj. of Natural Lang. Process*

- Implemented python based chinese-english statistic machine translation system. Reading existing large corpus data and built model to decode the input Chinese sentences;
- Word as a group leader. Arrange 6 group meetings to facilitate collaborations during the process and make sure group members kept the deadlines. Get a grade of A in this course.

## Other Research Experience

**Nov 2012-Apr 2013** | **Pipeline Fault Detect Algorithm Design**, *Master's Thesis*

Key words: Digital signal processing, feature extraction, artificial neural network, MATLAB, LABVIEW;

- Research on a novel scheme to detect and locate the small leak occurred in oil pipeline which is cooperated with *PetroChina Pipeline R&D Center*;
- Developed a novel algorithm to detect the abrupt change of pressure signal by extracting designed features and BP neural network classifier to distinguish leak signals from normal signals;
- Designed modified dynamic programming algorithm to speed the search process of the estimated change time of a pressure signal. Improved the detecting accuracy of traditional leak locate method by 10%.

**Dec 2012-Mar 2013** | **Research on the Determination of Metal Corrosion Types**,

Key words: Pattern Recognition, Neural network, Support vector machine, MATLAB;

- Co-worked project aimed to detect the metal corrosion types using electrochemical noise. Employed BP artificial neural network and support vector machine as two kinds of machine learning methods to classify three typical metal corrosion types. Ten representative features of electrochemical noise were extracted as the feature vector;
- Mainly responsible for the design of classifier. Use a 300-size data set contains 100 samples of each type to design and test the BP-NN and SVM classifier. The classification performance of BP and SVM was compared.

**Feb 2012-Nov 2012** | **Leak Monitor System Based on RTU**,

Key words: Data communication, TCP/IP, RTU, Data acquisition, C, LABVIEW;

- Established a Leak Monitor System use Remote Terminal Unit(RTU) and NI data acquisition (DAQ) board. The pipe pressure data in upstream and downstream transport station was measured and sent to the center server in real-time to detect leak events;
- Employed ADAM PC-based Programmable Controller as RTU to replace PC and DAQ solution due to the space and power restrains in field. Wrote C codes to program the RTU to measure and send field data to center server via TCP/IP. Defined data transmit protocols to pack and unpack pressure signals. Implemented Labview programs in the center;
- Drafted user manuals for the hardware and software to the user. Passed final evaluation.

## Education

**Sep 2014-Present** **Master of Science, Simon Fraser University**, Vancouver, Canada
Major: Computer Science in BigData, Gpa: 4.0
Spring 2015 Course: CMPT732 *Programming for Big Data*, CMPT886 *System for Big Data,*

**Sep 2011-Jan 2014** **Master of Engineering, Tianjin University**, Tianjin, China
Major: Instrument Science and Technology
Chinese State Key Lab of *Precision Testing Technology and Instruments*
Thesis: *The study of oil pipeline weak leak detection and location based on pressure and flow signals*

**Sep 2007-Jul 2011** **Bachelor of Engineering, Tianjin University**, Tianjin, China

## Papers

Co-author Determination of Corrosion Types from Electrochemical Noise by Artificial Neural Networks. *Int. J. Electrochem. Sci, 2013, 8: 2365-2377.* Science Citation Index

First author Method for Pipe Leak Detection and Location based on Model Change Detection. *World Sci-tech R & D(in Chinese)* 36.3 (2014): 247r252. doi: 10.3969/j.issn.1006-6055.2014.03.007

## Awards

Sep 2011- Jul 2013 National Graduate Scholarship Second Prize (Top 10%)

May 2011 The 12th National Undergraduate academic contest*"Challenge Cup"* special prize(Top 5%)

Sep 2008-Sep 2011 Annual merit Student of Tianjin University(Top 10%)

Dec 2009 Tianjin University Robot Competition First Prize (Top 10%)