



**Zhe Shi**

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**HIGHLIGHTS:**

- Real project experience in LabVIEW programming: data acquisition, signal processing and user interface development. (**Certified LabVIEW Developer**, Aug.27,2013)
- Sound knowledge in prognostic and health management for mechanical systems: proficient in using Matlab for signal processing, health assessment, and health diagnosis.
- Wide fundamental knowledge including: Mechanical Engineering, Electrical Engineering, Computer Science and Industry Engineering.

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**EDUCATION:**

**College of Engineering and Applied Science - University of Cincinnati** Aug. 2012 - Present  
Pursuing a PHD degree in Mechanical Engineering.

- Advisor: Dr. Jay Lee.

**School of Reliability and Systems Engineering - Beihang University** Sept. 2008 - July. 2012

- Bachelor of Science in Engineering.
- G.P.A. 84/100 3.5/4.0

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**CURRENT RESEARCH EXPERIENCES AT IMS CENTER:**

**NSF I/UCRC Center for Intelligent Maintenance Systems (IMS)** Aug. 2012 - Present  
Graduate researcher

- Research focused on frontier technologies in embedded and remote monitoring prognostics technologies, and intelligent decision support tools.

**Precision Machinery Research & Development Center** Jan. 2013 - Present

Use LabVIEW to Collect Data from Computer Numerical Control (CNC) Machines through SkyMars

- SkyMars is a used for communicating with different types of CNC machines, as well as collecting controller data from them.
- Connect LabVIEW with SkyMars via application program interface functions then remotely collect controller data.
- Arrange and store data to the local disk in a proper format for further analysis.

### **Institute for Information Industry**

Nov.2012 - Present

#### Elevator Health Diagnosis and Failure Prediction

- The elevator data are collected from a Taiwanese company. The elevator is also used daily.
- Focus on analysis elevator controller signal from the lifting system. My work includes data segmentation, feature extraction and health diagnosis for the lifting system.
- Make graphical user interface using Matlab to show the raw data, extracted features and health diagnosis result from both lifting and door system.

### **Parker-Hannifin**

Oct. 2012 - Present

#### Exploring the capability of Sensor Skin

- Patent survey for the new invention sensor skin and then provide claims suggestion.
- Hands on experience on making sensor skins on hose samples.
- Develop Data Acquisition (DAQ) system for sensor skin capability test using LabVIEW and help set up test bed. The DAQ system collects resistance value from the sensor skin which covers the working hydraulic hose.
- Analyze test data aiming to find out sensor skins' capability in detecting different hose failure types (pinhole, burst) and predicting hose failure from internal failure.

### **Watchdog Agent® Toolbox user follow up**

Oct. 2012 - Present

#### Solve problem Watchdog Agent® Toolbox users encountered when using toolbox

- Help process data provided by *Management Excellent Tools* which aims to make beverage filling valve health degradation monitoring using Watchdog Agent® Toolbox.
- Provide advice on how to use Watchdog Agent® toolbox making beverage filling valve degradation health monitoring including feature extraction from raw data, health diagnosis and health assessment.

### **CORBI Solar World**

Sept. 2012 - Present

#### Predictive Modelling for High Performance and High Yield Photovoltaics Manufacturing

- Develop a real-time wire saw ingot cutting process health diagnosis model to detect abnormal machine slicing processes. Focus on feature extraction from raw data and using support vector machine making health diagnosis algorithm.
- Develop user interface to show the raw data collected from wire saw slicing machine using LabVIEW. Provide more information from raw data via proper visualization.

### **Innovation Creation Program of Beihang University**

Sept. 2010 - Jun. 2011

The Program gives students opportunity to practice skills in Real Engineered Systems

- Develop elevator control program using language C on SPCE 061A.
- Design elevator model control box circuit using Protel DXP 2004.

### **Student Research Training Program of Beihang University**

Sept. 2010 - Oct. 2011

The program supports students do innovation research in related area

- Design GPS-based anti-theft (GBAT) system for vehicle. In charge of circuit design and making.
- The GBAT system will send present GPS location of the vehicle to user's cell phone using message when requested.

## **Internships:**

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### **National Instruments**

May. 2013 - Aug. 2013

Prognostics and health monitoring intern – software development II

- Help Blue Ridge team develop prognostic and health monitoring program based on LabVIEW using Watchdog Agent® toolkit.
- Provide future plan for Blue Ridge team to implement PHM technologies into their data logging and analysis platform.

## **ACTIVITIES:**

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### **Beihang Bluesky Volunteer Union, Core Leader**

Apr.2009 - Jun. 2011

University official volunteer organization

- Arrange volunteers in Beihang University to voluntarily teach in Tongxin elementary school every weekend.
- Help arrange voluntary activities in Songtang hospice center and Sun village.

## **COMPUTER SKILLS**

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**Programming:** Matlab, LabVIEW, C#, C, Protel DXP 2004, AutoCAD.

**Applications:** Microsoft office.