

# ART ZOU

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## EDUCATION

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**Northwestern University** —Evanston, IL

GPA: 3.692

**Xi'an Jiaotong University** —Xi'an, China

GPA: 85.02/100

M.S. Computer Science

September 2013 — June 2015

B.S. Information Engineering

September 2009 — July 2013

## SKILLS

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- Programming Language: Proficient in C/C++, Java, Ruby, SQL. Familiar with assembly, Basic, Rspec.
- Computer Engineering: Proficient in analog circuit analysis, design and soldering, micro-controller programming, digital signal processing, operating system, communication protocol.

## PROFESSIONAL EXPERIENCE

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**Rehabilitation Institute of Chicago**

June - Sept. 2014

**Software Engineer Intern(C++/Web)**

- Built a fully integrated system for wireless Segway control and automation in **C++** based on **PIC32** MCU.
- Established **wireless** connection between Segway and PC using Microchip **WiFi API**.
- Implemented a user interface (**Html/Javascript**) and a CLI (**Matlab**) for interacting with Segway through WiFi.
- Developed drivers in **C++** for gyro and proximity sensors on **SPI** and **I2C** serial protocol.
- Developed driver for Segway Motor on **UART** protocol.
- Solved balancing and obstacle avoiding problem by using algorithm of **PID** control.
- Helped soldering throw-hole and surface amount **PCB** with bake technique.
- Helped trouble shooting with skill in **oscilloscope**.

## PROJECT EXPERIENCE

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**System Programming Experience**

**Smart Library System Design(C++/ SQL/Wireless)**

- Built a Smart Library System to automate the process of book management by using **RFID** technology.
- Programmed a driver of TRF7960A RFID reader for wireless book detection based on **ISO15693** standard.
- Programmed the firmware of **MSP430** MCU for system initialization and info exchange.
- Implemented an **anti-collision** book detection technique using inventory checking algorithm in **C++**.
- Built a 50\*50 cm<sup>2</sup> square **antenna** and corresponding **power amplifier**.
- Designed and developed library **database** using **MySQL** for book and student information management.

**Sound Locating System(C)**

- Built a Small Sound Locating System to simulate the process of primitive global positioning system.
- Programmed a driver for crystal screen based on **MSP430** MCU for displaying position on **I2C** protocol.
- Programmed an algorithm for positioning based on info from **phase** detector.

**Java Programming Experience**

**Sudoku Game Development(Java)**

- Designed and developed a fully functional desktop Sudoku game from scratch in **Java**.
- Implemented a graphic user interface with the **Swing** library.
- Implemented hint, difficulty choice and other features by **dynamic programming** technique.

**Robot Car Project(Java)**

- Created a self-control automatic driving system for the robot car in **PBasic**.
- Simulated a driverless car path-planning behavior by implementing the modified **A\*** pathfinding algorithm in **Java**, making the robot car run the shortest path to the destination while avoiding obstacles.

**Senior Software Project(Java/Matlab)**

- Implemented multi-layer seismic fault detecting function by using Dave-Hale algorithm in **Java**.
- Implemented 3D full scope seismic fault shifting and flatting based on **graphic** technique.