

Won Dong Shin

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EDUCATION

University of Illinois at Urbana-Champaign

Bachelor of Science in Mechanical Engineering (May 2016)
Minor in Computer Science

Overall GPA: 3.91/4.00
Technical GPA: 4.00/4.00

OBJECTIVE

Passionate Mechanical Engineering student with definite purpose of pursuing Ph.D. degree in graduate school with the best Robotics program and becoming a Professor in Robotics

RELATIVE COURSES

Introduction to Robotics
Mechanical Design
Data Structure

Signal Processing
Linear Algebra
Design for Manufacturability

Dynamics of Mechanical Systems
Electric and Electronic Circuits
Computer Aided Design

RELATIVE EXPERIENCES

Professor Srinivasa M. Salapaka's Research Group

Research Assistant

University of Illinois, Urbana

November 2014 – Present

- Implemented LabVIEW code for three dimensional simulation plot of data acquisition of atomic force microscopy (AFM)
- Learned how to implement inverse based controller, H-infinity controller, and PID controller in MATLAB
- Applied pipe lining to FPGA side of LabVIEW code for faster data acquisition and calculation in PID nanopositioning controller of AFM
- Explored in employing tools from H-infinity robust control theory to improve robustness and tracking bandwidth for XY nanopositioning controller of AFM using NI-myRIO FPGA hardware

Korea Institute of Robot and Convergence (KIRO)

Research Assistant (Internship)

Pohang, Korea

June 2014 – July 2014

- Learned basic robotics concepts with materials provided by the institute
- Designed various parts for experimental purposes and comprehension of key features of SolidWorks
- Participated in testing an underwater sludge cleaning robot to investigate its robustness and performance
- Manufactured robot prototypes using 3D printer and explored post-treatment techniques

Republic of Korea Army

Sergeant / M67 Recoilless Rifle Shooter / MG-50 Shooter / Coast Guard / Cook

Sam-cheok, Korea

July 2011 – April 2013

- Led a squad of M67 Recoilless Rifle (an anti-tank artillery) and trained the squad
- Learned how to follow a leader, how to be a good leader, and how to cooperate with others
- Guarded East Coast of South Korea overnight from North Korea with MG-50 (a machine gun), and mastered how to use thermal observation devices, night vision equipments, and MG-50
- Cooked every meal for 40 soldiers while guarding the East Coast

PROJECT EXPERIENCES

Mechanical Engineering Senior Design Project

University of Illinois, Urbana

Team Member

September 2015 – Present

- Managed and planned the project to fulfill tasks given from the Timken Company
- Developed RPM sensor using Hall Effect Sensor and magnets, controlled by Arduino Uno and C++ language for automation of quality control process
- Wrote an algorithm to analyze RPM values and to generate success or failure signal for the servo

CS 225: Data Structure (C++)

University of Illinois, Urbana

Student

June 2015 – August 2015

- Implemented arithmetic operation calculator using Shunting-yard algorithm
- Wrote Quadtree image object which allows rotating and pruning images
- Created mosaic picture generating program which fills in each pixel of a picture with another picture from a pool of pictures by applying k-d Tree algorithm to find nearest RGBA value
- Constructed maze generating program and a maze solving program using disjoint set

LEADERSHIP & ACTIVITIES

Korean Mechanical Engineers Network (KMEN)

University of Illinois, Urbana

Co-founder / Vice President

June 2013 – December 2014

President

January 2015 – Present

- Founded and led a registered organization to provide professional network of 79 mechanical engineering students/alumni
- Organized a graduate school workshop with graduate students for 32 mechanical engineering undergraduate students
- Arranged Resumes and Cover Letter Workshop for members by inviting a professional career counselor

iRobotics

University of Illinois, Urbana

Member

September 2014 – March 2015

- Participated in design meetings to build a robot for Jerry Sanders Robot Design Competition
- Trained for tungsten inert gas (TIG) welding to link robot parts

KC-CU Church

Urbana, IL

Volunteer

June 2013 – Present

- Took care of babies and led bible studies while their parents were in service
- Led worship with guitar every Sunday morning

HONORS & AWARDS

- Embassy of South Korea Scholarship 2014 winner for excellence in academics
- Dean's List: 5 consecutive semesters

SKILLS

- **Programming Language:** C, C++, Java, MATLAB, LabVIEW
- **Software:** Pro/E, Creo3.0, SolidWorks, Microsoft Office
- **Language:** Fluent in both English and Korean