JAE-EUN (ESTHER) LIM

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EDUCATION

Carnegie Mellon University
Pittsburgh, PA
May 2018
GPA 3.80/4.00
Bachelor of Science in Mechanical Engineering
Double Major in Robotics

SKILLS

Software
SolidWorks
Autodesk Inventor
MS Office
Arduino
Weka/LightSide

Machines
Lathe
Drill Press
Band Saw
Milling Machine
Laser Cutter
3D Printer

Programming
C
Python
MATLAB/Simulink
HTML/CSS (self taught)
Assembly Language

Languages
Fluent in Korean & English

RELEVANT COURSES

Engineering Design I
Thermal-Fluids Experimentation
Statics, Stress Analysis, Dynamics
Dynamic Systems and Controls
Thermodynamics
Fluid Mechanics
Heat Transfer

Soft Robotics
Applied Machine Learning
Eng. Stats and Quality Control
Business Communications
Machine Shop Practice

RELEVANT EXPERIENCE

Engineering Intern – **Perception Robotics**, *Summer 2016 (Los Angeles, CA)*
- Designed test rig for gecko gripper to test scaling effect on adhesion pressure.
- Manufactured molds for touch sensors using 3D printer.
- Conduct risk assessment for touch sensors on FANUC robotic arm.
- Operated Kawasaki RS06L using AS Language.

PROJECTS

Motion Sensing Glove, *Spring 2017*
- Modeled bending of finger and error in mapping of resistance and bend angle.

Machine Learning-Sentiment Analysis, *Spring 2017*
- Optimized machine learning algorithm via error analysis and parameter tuning.

Atlas, **Auto-Steering Buggy** – Project Lead for IMU Suspension System, *Spring 2017*
- Designed and built suspension system for IMU mount.

Smart Ball – Build18 Annual Engineering Festival, *Spring 2017*
- Designed and built a remote-controlled ball that bounces around. Won Media Magician Award.

Carnegie Mellon Racing: Structures – Rotor Buttons, *Fall 2016*
- Designed front rotor buttons to reduce wear.

Astronaut's Coat Rack – Lightest Bracket, *Fall 2016*
- Designed the lightest acrylic bracket to hold 40-pound weight.

Pokeball Gripper – Second Lightest Gripper, *Fall 2016*
- Designed the second lightest gripper to hold and swing 3-lb Pokeball.

Motor & Gearbox, **Wheel Design** – Engineering Design I, *Fall 2016*
- Designed and selected the most efficient manufacturing process for mass production of a wheel that would roll in a barrel to climb up a ramp.
- Selected motor and gearbox combination for the wheel that would optimize a cost function of roll time, energy, and price.

Crane Project – Captain of 1st Place Team, *Spring 2016*
- Led a team of 3 in a competition whose objective was to design and construct a small aluminum crane that could withstand the stresses of lifting a cylindrical weight as high as possible.
- Placed first out of 36 teams for highest lift achieved.

Robotics Projects – Weekly Labs for Introduction to Robotics, *Spring 2016*
- Designed nine robots using Lego Mindstorms and wrote code in robotc to complete projects with the following topics: Computer vision, PID control, dead reckoning, motion planning, localization, urban search and rescue, and forward/inverse kinematics.

GeaRace – Final Project for Fundamentals of Programming, *Spring 2015*
- Created computerized car game using Python and Tkinter that teaches students the physics of gear trains.

LEADERSHIP AND ACTIVITIES

Teaching Assistant – **Introduction to Robotics**, *Spring 2017*
- Organize and lead labs. Help students in office hours. Assess students for the labs.

Co-VP of Events Committee, WoMEn@CMU, *Fall 2016 – present*
- Organize outreach events to expose Mechanical Engineering to local middle/high school female students through in-class sessions composed of a lecture and a hands-on experiment.

Co-President of CCO Delta, *Fall 2014 - present*
- Hold Bible studies and Christian fellowships to live out the mission of "transforming college students to transform the world."

Mentor – **Physics Concepts Outreach Program**, *Fall 2015 - Spring 2016*
- Mentored two 8th grade students in a project on Conservation of Momentum and prepared them to present at the Pennsylvania Junior Academy of Science.
- Assisted professors in guest lectures for twenty 6th graders who were prospective for the program.

Sunday School Leader, Los Angeles Hope Church, *Fall 2013-Summer 2015*
- Coordinated and led Bible quizzes and activities (incorporated science and technology).
- Designed and decorated new Sunday school building.