JAE-EUN (ESTHER) LIM

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EDUCATION

Carnegie Mellon University
Pittsburgh, PA
May 2018
GPA 3.84/4.00
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/Django (self taught)
Assembly Language

Languages
Fluent in Korean & English

RELEVANT COURSES

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

Robotics
Soft Robotics
Applied Machine Learning
Robotics Systems Engineering
Robot Kinematics and Dynamics
Computer Vision

Others
Eng. Stats and Quality Control
Business Communications

RELEVANT EXPERIENCES

Research Assistant – Robomechanics Lab, *Fall 2017*
- Conduct research in visual inertial odometry for legged robots.
- Create simulations of bounding gait vision.

Engineering Intern – **Verify Apply**, *Summer 2017*
- Designed and implemented frontend and backend of website from scratch.
- Used Django framework.

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.
- Conducted risk assessment for touch sensors on FANUC robotic arm.
- Operated Kawasaki RS06L using AS Language.

MECHANICAL ENGINEERING PROJECTS

Heat Sink, *Spring 2017*
- Investigated and analyzed a commercial CPU heat sink to determine if it will meet required performance.

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.

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

Feeding Robot, *Fall 2017*
- Programmed a 5 degree-of-freedom robotic arm to scoop up beads and drop them into a hole to simulate feeding a person.

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.

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.

LEADERSHIP AND ACTIVITIES

Co-VP of Outreach 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.

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

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.