

## EDUCATION

### Carnegie Mellon University

Pittsburgh, PA

GPA 3.79/4.00

Bachelor of Science in  
Mechanical Engineering  
Additional Major in Robotics  
Spring 2018

## SKILLS

### Programming/Software

Java  
C/C++  
Python  
MATLAB/Simulink  
HTML/CSS/Django  
SolidWorks  
Weka

### Frameworks/Applications

OpenCV  
AWS  
Git

### Languages

Fluent in Korean & English

## RELEVANT COURSES

Computer Vision  
Machine Learning  
Feedback Controls System  
Robotics Systems Engineering  
Robot Kinematics and Dynamics  
Fundamentals of Programming and  
Computer Science  
Principles of Imperative Programming  
Soft Robotics

## RELEVANT EXPERIENCES

### Mobile Computer Vision Engineer – Diamond Kinetics, Inc. *September 2018-present (Pittsburgh, PA)*

- Develop computer vision algorithms to facilitate baseball/softball motion analysis.
- Implement and analyze IMU and magnetometer data processing algorithms for baseball/softball pitches and swings.

### CAD Design Automation Intern – Kennametal, Inc. *Summer 2018 (Latrobe, PA)*

- Developed application in C++ to automate tray loading for milling inserts.
- Created algorithm for arranging different shapes of milling inserts and optimized peg pitch on tray for space efficiency.

### Research Assistant – Computer Vision Group, Robomechanics Lab, *Fall 2017-Spring 2018*

- Conducted research in visual odometry for bounding legged robots to explore the effect of pitch motion in visual odometry estimation.
- Created MATLAB simulation of the camera view of a bounding robot.

### Software Engineer Intern – Verify Apply, *Summer 2017*

- Designed and implemented frontend and backend of website from scratch using Django frameworks.

## PROJECTS

### Computer Vision, *Spring 2018*

- Implemented in MATLAB: Hough transform, bag of visual words, OCR using neural networks, image matching, stitching and homographies, 3D reconstruction, image alignment and tracking.

### Machine Learning, *Spring 2018*

- Implemented in C++ and Java: decision tree, logistic regression, neural network, Hidden Markov Model, reinforcement learning.

### Smart Dog Toy – Capstone (Most Innovative Award), *Spring 2018*

- Designed and built a treat-dispensing dog toy with a live stream camera that is remote-controlled via web app.

### Physical Pac-Man Game – Capstone, *Fall 2017-Spring 2018*

- Designed and built autonomous Pac-Man and tele-operated Ghost robots.
- Designed and built portable and easy to assemble game board.

### Feeding Robot, *Fall 2017*

- Programmed in MATLAB a 5 degree-of-freedom robotic arm to scoop up beads and drop them into a hole to simulate feeding a person.

### Robotics Projects – Introduction to Robotics, *Spring 2016*

- Designed nine robots with Lego Mindstorms and programmed them to implement PID control, dead reckoning, motion planning, localization, urban search and rescue, and forward/inverse kinematics.

## LEADERSHIP AND ACTIVITIES

### Outreach Chair, WoMEn@CMU, *Fall 2016 – Spring 2018*

- 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, Spring 2018*

- Organize and lead labs. Help students in office hours. Assess students for the labs.