

# Yeonju Kim

MECHANICAL ENGINEERING · ROBOTICS

411 E Park St Apt 201, Champaign, Illinois, USA

☎ (+1) 217-418-7162 | ✉ yeonjuk2@illinois.edu | 🌐 yeonju-kim.github.io

## Education

### University of Illinois at Urbana-Champaign

Illinois, US

M.S. candidate in Mechanical Engineering

Sep. 2019 - PRESENT

- Cumulative GPA 3.91/4
- Coursework includes: Control System Theory and Design, Computational Photography, Machine Learning, Markov Decision Processes and Reinforcement Learning

### Seoul National University

Seoul, South Korea

B.S. in Mechanical Engineering and Aerospace Engineering

Mar. 2014 - Feb. 2019

- Cumulative GPA 3.73/4.3

## Publication

- **Y.Kim**, Z.Pan, and K.Hauser. MO-BBO: Multi-Objective Bilevel Bayesian Optimization for Robot and Behavior Co-Design. Submitted to IEEE International Conference on Robotics and Automation (ICRA) (submitted)

## Research Experience

### Intelligent Motion Laboratory; University of Illinois at Urbana-Champaign

Illinois, US

Research Assistant

Sep. 2019 - Present

- Supervisor: Kris Hauser (*Prof. Dep. of Computer Science*)
- Develop an **Automated Robot Design Suggestion Algorithm** that helps designers to explore design space effectively.
- Optimize multiple performance metrics measured by physical simulation to find optimal robot designs.

### Biorobotics Laboratory; Seoul National University

Seoul, South Korea

Undergraduate Researcher

Mar. 2017 - June. 2018

- Supervisor: Kyu Jin Cho (*Prof. Dep. of Mechanical and Aerospace Eng.*)
- Fabricated soft robotic modules with 3-D printer.
- Analyzed soft modules movement using Pseudo Rigid Body Modeling method.
- Developed a bending angle prediction method as a design guide for users to attain desired motions.
- Thesis: "Development of Pseudo-Rigid Body Model for Modularized Soft Bending Actuators"

### Disney Research Zurich and Autonomous Systems Laboratory; ETH Zurich

Zurich, Switzerland

Undergraduate Researcher

Sep. 2017 - Feb. 2018

- Supervisor: Paul Beardsley (*Principal Research Scientist, Disney Research Zurich*), Roland Siegwart (*prof. Dep. of Mechanical and Process Eng., ETH Zurich*)
- Designed and fabricated two different designs minimizing the adverse effect on servomotor caused by undesirable rake's motions.
- Thesis: "Design, Fabrication, and Testing of a rake for the Beachbot Robot"

## Work Experience

### Bear Robotics, Inc.

Seoul, South Korea

Software Engineering Intern

Jan. - June 2019

- Developed web-based ROS data visualization using ROS Javascript libraries.
- Investigated Seq2Seq model and Transformer model to implement Korean Chatbot.

### NCSOFT Corporation

Seongnam, South Korea

Game Development Intern

July - August 2018

- Made Turn-Based 3-D Tank Game using Unreal Engine 4.
- Developed client networking module using Multithread programming.
- Created a Multiplayer Online Tank Game based on Client-Server architecture.

### Envisible Corporation

Seoul, South Korea

Part time Intern

July - August 2018

- Created 3-D CAD models of Fitness Equipments for children.

## Skills

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**Programming** Python, C/C++, OpenCV, TensorFlow, PyTorch, MATLAB, Javascript, HTML, CSS, ROS

**3-D Modeling** SOLIDWORKS, Fusion360, 3D-MAX

**Other Software** Unreal Engine, Adobe Photoshop, Adobe Illustrator

## Honors & Awards

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**Korean Government Scholarship for Overseas Study**, National Institute for

2019 - 2021

International Education, Korean Government

Awarded 40K US Dollars annually for 2 academic years

**National Scholarship for Science and Engineering**

2016 - 2017

Awarded 6,000 US Dollars annually for 2 academic years (full tuition)

**Eminence Scholarship**, Seoul National University

Sep. 2015

Awarded 3,000 US Dollars (full tuition)

**Gold Prize**, The 7th Creative Design Challenge for 90 Percent Alienated

May 2015

Team Project: "Color your dreams – Season 1: Palestine"

**SNU Development Fund Scholarship**, Sangjin Foundation

March 2015

Awarded 2,000 US Dollars

**Merit-based Scholarship**, Seoul National University

Sep. 2014

Awarded 1,500 US Dollars

## Teaching Experience

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**Department of Physics and Astronomy**, Seoul National University

Seoul, South Korea

Undergraduate Tutor

March - June 2015, 2016

- Taught Physics to eight freshman students in total.

## Extracurricular Activity

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**SNU Tomorrow's Engineers Membership(STEM)**, Seoul National University

March 2016 - August 2017

- The only honor society in College of Engineering, Seoul National University
- Designed promotion poster for recruiting.
- Participated in **Vision Mentoring** as a presenter.
  - Shared my vision and experiences with over 300 high school students to encourage them to study engineering.
- Served for the department of social service.

**TRIX, Snowboard Club**

Dec. 2015 - Feb. 2017

- Trained for six weeks in Pyeongchang and taught trainees in the next year.