Yeonju Kim

MECHANICAL ENGINEERING · ROBOTICS

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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, Special Topics in Learning-based Robotics

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) (Under Review)

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)*
- Developed a co-optimization method for robot design and behaviors, which helps designers effectively explore the design space.
- Evaluated the method by applying it to grasping gripper design and arm placement for a bimanual mobile manipulator.

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   *Seoul, South Korea*

Sortware 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 Kroea*

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 Kroea*

Part time Intern   *July - August 2018*

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

Skills

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

Korean Government Scholarship for Overseas Study, National Institute for International Education, Korean Government *2019 - 2021*

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

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

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. Presented my vision and experiences to about 300 high school students.
- Served for the department of social service.

TRIX, Snowboard Club, Dept. of Physical Education, Seoul National University *Dec. 2015 - Feb. 2017*

- Participated in snowboard training for six weeks in Pyeongchang and taught trainees in the next year.