Jinhyuk Yoon

LivsMed
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A robotics engineer with mechanical engineering and software development background. Specialized in robotics, system control, haptic interface design, and user experiment. Focus on product development for users and communication to make results as a team. Fluent in public speech and communication with domain knowledge.

Experience

LivsMed Feb 2022 – Present

Robotics Software Engineer (Alternative military service)

Founding member of Robot R&D Department and Control SW team
Develop prototype and engineering sample stages surgical robot product
Develop robot software in distributed, multithreaded, and hard real-time environment
Lead control algorithms development and system integration testing
Lead software validation of medical devices for TRL 7 project
Serve as a Technical Research Personnel

Medical Assistant Robotics and Cognitive Haptics Laboratory Mar 2020 – Jan 2022

Research Assistant

Designed, analyzed, and controlled a planar cable-driven haptic interface with adaptive mechanism
Published a top-tier international journal paper as the first author
Led haptic interface development of a national research foundation project
Advisor: Keehoon Kim

Interaction Laboratory Feb 2019 – Aug 2019

Undergraduate Research Assistant

Prototyped system for augmenting programmable feels of physical buttons with vibrotactile feedback
Published a top-tier international conference paper as the second author
Advisor: Seungmoon Choi

Samsung Electronics Jan 2019 – Feb 2019

Mechanical Design Intern

Worked at Digital Appliances Division, Core Component R&D Lab
Developed a web application that simplified torque analysis and hinge design process

Education

Master of Science in Mechanical Engineering 2020 – 2022

Pohang University of Science and Technology (POSTECH)

Master thesis: Development of an adaptive planar cable-driven haptic interface to maximize workspace for virtual education contents
Advisor: Keehoon Kim

Bachelor of Science in Mechanical Engineering 2014 – 2020

Pohang University of Science and Technology (POSTECH)

Honor graduation with Magna Cum Laude
Minor in industrial management engineering
Served as student president of department of mechanical engineering
Served as chairman of student election committee
Served as director of TEDxPOSTECH

Publications

Cable-Driven Haptic Interface With Movable Bases Achieving Maximum Workspace and Isotropic Force Exertion

Jinhyuk Yoon, Donghyeon Lee, Junyong Bang, Hyung Gon Shin, Wan Kyun Chung, Seungmoon Choi, and Keehoon Kim. *IEEE Transactions on Haptics.* (Early Access)

Augmenting Physical Buttons with Vibrotactile Feedback for Programmable Feels

Chaeyong Park, **Jinhyuk Yoon**, Seungjae Oh, and Seungmoon Choi. *In Proceedings of ACM UIST 2020.* (Acceptance rate 21.6%)

Awards and Honors

Commission Letter 2016

Minister of Ministry of Science & ICT commissioned me as a science communicator

Finalist 2016

Nationwide Top 11 of the 3rd FameLab Korea

Winner 2019

Developed campus map android application at the 7th POSTECH Hackathon

Runners Up 2017

Created media artwork at the Artience Creation Challenge 30x30 hosted by British Council Korea

Honorable Mention 2015, 2020

Introducing My Research, 3 Minutes Science Speech Contest hosted by POSTECH

Student of the Year 2015, 2016

POSTECH, Department of Mechanical Engineering

4th Place 2016

Designed graduate school searching web platform at the 2nd POSTECH Hackathon

Research Assistantship 2020 - 2022

POSTECH

Teaching Assistantship 2020

POSTECH

National Academic Excellence Scholarship 2016 - 2019

Korea Student Aid Foundation, Full-tuition

KT&G Foundation Scholarship 2016

POSTECH

Jigok Scholarship 2014 - 2016

POSTECH, Full-tuition

Projects

Science Communication 2016 – 2020

Developed public speech and stage contents explaining science and engineering
Performed 60+ speech and 10+ stage in public and various institutions

Entropy 2017

Media art work at 2017 Artience Creation Challenge 30x30, winning Runners Up
Express ageing with entropy which measures disorder and indicates direction of time

Picture Science Project 2016

Collaboration voluntary project with Korea National University of Arts students
Boosted science interest and understanding in elementary students through drawing and toy-making
Visited two children center and met 40+ children

TEDxPOSTECH 2014 – 2015

Organized a TEDx event as a director and invited professor, writer, and pop-singer as speaker
Regular application was sold out in 50 seconds after open sign-ups

Skills and Tools

Programming Language
C/C++, Python, MATLAB

Real-time control
Linux, TwinCAT, EtherCAT

3D Design
Solidworks