Hyeongkeun KIM

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EDUCATION

B.S. in Mechanical Engineering and B.S. in Bio and Brain Engineering 2013 – 2020 (Expected)
Korea Advanced Institute of Science and Technology (KAIST), Republic of Korea Cumulative GPA: 3.77/4.30

- Dean's List for Creative Excellence (Fall 2014)
- Recipient of Presidential Science Scholarship: One of 123 students chosen by the President of Korea.
- Study abroad at INSA Lyon (France) under Mirae Asset Scholarship for Overseas Exchange Students. (Spring 2015)

RESEARCH & PROFESSIONAL EXPERIENCE

KAIST, Biomicrofluidics Lab – Research Assistant Jun. 2016 – Present

- Worked under Professor Jessie S. Jeon as the only undergraduate research assistant.
- Designed an automated system that measures *in-situ* bacterial growth in microchannels using vision marker.
- Developed a script for designing 3D printable models of templates for lab-on-chip using a sandbox game 'Minecraft.'
- Co-first author in "MineLoC: A Rapid Production of Lab-on-a-Chip…" (*Sensors*, 2018) and fourth author in "Vision Marker-Based In-Situ Examination of Bacterial Growth…" (*Sensors*, 2016)

NAVER Corp., NAVER LABS Robotics Group – Research Intern Aug. 2016 – Feb. 2017

- Worked under Dr. Sangok Seok, the current CEO of NAVER LABS Corp.
- Designed and optimized an indoor service robot (TuskBot) that is compatible with most stairs in existence.
- Improved structural designs and developed wireless data acquisition system of the autonomous personal transporter.
- Published "Design Analysis of Tuskbot…" in *IEEE/RSJ IROS 2017* conference as the corresponding author and featured in annual corporate press conference *DEVIEW 2017*. Third author in "Motion Planning of Autonomous Personal Transporter…" in *UR 2018* conference, which received the Best Application Paper Award.

KAIST, Neuro-Rehabilitation Engineering Lab – Research Assistant Dec. 2015 – Feb. 2016

- Optimized control performance on wearable gait assisting device for cerebral palsy patients with crouch gait.
- Improved sensor resolution from 10 to 14 bits and acquisition speed from 10kHz to 200kHz by redesigning the system.

TEACHING & VOLUNTEERING

National Social Service Corps Program, Changwon Dongbaek School – Social Service Agent Mar. 2017 – Feb. 2019

- Assisted elementary and middle school students with severe cerebral palsy, brain lesions, and learning disabilities.
- Coordinated weekly meetings for all social service agents, worked as a liaison with the teachers and the administration.
- Awarded "commendation" by the Military Manpower Administration of Korea for excellent service.

KAIST School of Computing, Introduction to Programming (CS101) – Teaching Assistant Fall 2015, Spring 2016

- Advised and mentored freshmen in lab sessions. Provided technical support, graded exams, and assignments.

LEADERSHIP

KAIST, Microrobot Research (Robotics Club) – Team Co-founder and Team Leader Mar. 2013 – Present

- The team was awarded 13 prizes across robotics and bioengineering competitions, featured in the keynote for the 2014 Intel Korea Year-End Press Conference, presented in six robotics conferences, and published five peer-reviewed papers.
- Team leader for Honorary mention in Korea Wearable Computer Contest 2014 sponsored by Samsung Electronics.

SELECTED PUBLICATIONS & PRESENTATIONS

1. K. Kim*, **H. Kim***, S. Kim, J. S. Jeon, "MineLoC: A Rapid Production of Lab-on-a-Chip Biosensors Using 3D Printer and the Sandbox Game, Minecraft" *Sensors* 18.6 (2018): 1896, doi: 10.3390/s18061896 (**Co-first Author**)
2. J. Choe*, U. Kwon*, M. C. Nah* and **H. Kim***, "'Design Analysis of TuskBot: Universal Stair Climbing 4-Wheel Indoor Robot" in *2017 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, Vancouver, BC, 2017, pp. 6908-6914. (**Corresponding Author**)

SKILLS

- **Laboratory Techniques**: Soft lithography for microfluidics, mammalian cell culture, and biological image processing
- **Programming**: MATLAB, Python, JAVA, LabView and embedded programming with STM32F4, MSP430 and AVR series
- **Software**: PyTorch, Matconvnet, OpenCV, Webots, SolidWorks, Siemens Solid Edge, and AutoCAD
- **Language**: English(Fluent, iBT TOEFL - 109, GRE - V166/Q169/W4.0), Korean (Native), French (Basic)