

# Curriculum Vitae

## Soo Chul Lim

Associate Professor, Department of Mechanical, Robotics, and Energy Engineering,  
Dongguk University

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### Professional Academic Experience

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*Professor*

Department of Mechanical, Robotics, and Energy Engineering, Dongguk University, Korea  
2026-present

*Associate Professor*

Department of Mechanical, Robotics, and Energy Engineering, Dongguk University, Korea  
2022- 2026

*Visiting Scholar*

Department of Electrical and Computer Engineering, University of California San Diego, USA  
Host: Prof. Xiaolong Wang  
2022-2023

*Assistant Professor*

Department of Mechanical, Robotics, and Energy Engineering, Dongguk University, Korea  
2016-2022

*Assistant Professor,*

Department of Weapons and Mechanical Engineering, Korea Military Academy, Korea  
2007-2009

*Full-time Instructor,*

Department of Weapons and Mechanical Engineering, Korea Military Academy, Korea  
2006-2007

### Professional Experience

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*Research Staff Member,* Visual Processing Lab, Device and System Research Center,  
Samsung Advanced Institute of Technology, Samsung Electronics  
2011-2016

## Education

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### KAIST, Korea

- Ph.D in Mechanical Engineering February 2011  
*Advisor:* Prof. Dong-Soo Kwon  
*Dissertation:* Frequency Modulation Effect on the Vibrotactile Perception
- M.S in Mechanical Engineering August 2003  
*Advisor:* Prof. Dong-Soo Kwon  
*Thesis:* Human Friendly Interfaces of a Robot Manipulator Control System for Handicapped Person
- B.S in Mechanical Engineering February 2001

## Publication

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### International Journal

- [41] Kang-Won Lee, Jung-Woo Lee, Seongyong Kim, and **Soo-Chul Lim**, “Progressive Policy Learning: A Hierarchical Framework for Dexterous Bimanual Manipulation”, *Mathematics* 2025, 13(22), 3585
- [40] Kang-il Yoon, Jung-Hwan Yang, and **Soo-Chul Lim**, “Robust Slip Detection using Magnetic Tactile Sensors during Dynamic Robotic Manipulation via Stray Magnetic Fields Compensation”, *IEEE Sensors Journal*, 25(19), pp 36215 – 36229, 2025
- [39] Kang-il Yoon and **Soo-Chul Lim**, “Real-to-Sim High-resolution Cloth Modeling: Physical Parameter Optimization using Particle-based Simulation with Robot Manipulation Data”, *Journal of Computational Design and Engineering*, Volume 12, Issue 8, pp 29–44, 2025 (Designated as Editor’s Choice by JCDE Editorial Board)
- [38] Seunghyeon Ha, Seongyong Kim, and **Soo-Chul Lim**, “Prediction of Delay-Free Scene for Quadruped Robot Teleoperation: Integrating Delayed Data with User Commands”, *IEEE Robotics and Automation Letters*, 10(3), pp 2846-2853, 2025
- [37] Eugene Jeong, Jung-Hwan Yang, and **Soo-Chul Lim**, “Deep Neural Network for Valve Fault Diagnosis Integrating Multivariate Time-Series Sensor Data”, *Actuators*, 14(2), 70, 2025
- [36] Jung-Hwan Yang, Kang-Il Yoon, Seunghyeon Ha, Andy Hong, and **Soo-Chul Lim**, “Estimating Indoor Tile Friction Coefficient Using Visual Information”, *Journal of Computational Design and Engineering*, 12(1), pp 331-345, 2025
- [35] Kang-Won Lee; Yuzhe Qin; Xiaolong Wang; Soo-Chul Lim, “DexTouch: Learning to Seek and Manipulate Objects With Tactile Dexterity”, *IEEE Robotics and Automation Letters*, 9(12), pp. 10772-01779, 2024
- [34] Kang-Won Lee, Dae-Kwan Ko, Yong-Jun Kim, Jee-Hwan Ryu, and **Soo-Chul Lim**, “Latency-Free Driving Scene Prediction for On-Road Teledriving With Future-Image-Generation”, *IEEE Transactions on Intelligent Transportation Systems*, 25(11), pp.16676-16686, 2024 |
- [33] Kang-Il Yoon, Tae-Soo Jeong, Seung-Chan Kim, and **Soo-Chul Lim**, “Anonymizing At-Home Fitness: Enhancing Privacy and Motivation with Virtual Reality and Try-On”, *Frontiers in Public Health*, Volume 11, 2023 |
- [32] Dong-Han Lee, Kyung-Soo Kwak and **Soo-Chul Lim**, “A Neural Network-based Suture-tension Estimation Method Using Spatio-temporal Features of Visual Information and Robot-state Information for Robot-assisted Surgery”, *International Journal of Control, Automation and*

- Systems*, 21, pp 4032–4040, 2023
- [31] Kang-Il Yoon, Dae-Kwan Ko, and **Soo-Chul Lim**, “Real-time Video Prediction Using GANs With Guidance Information for Time-delayed Robot Teleoperation”, *International Journal of Control, Automation and Systems*, 21, pp 2387–2397, 2023
- [30] Jung-Hwan Yang, Seong-Yong Kim, and **Soo-Chul Lim**, “Effects of sensing tactile arrays, shear force, and proprioception of robot on texture recognition”, *Sensors*, 23(6) 2023
- [29] Dae-Kwan Ko, Kang-Won Lee, Dong Han Lee, and **Soo-Chul Lim**, “Vision-Based Interaction Force Estimation for Robot Grip Motion without Tactile/Force Sensor”, *Expert Systems with Applications*, Vol 211, 118441, 2023
- [28] Kang-Won Lee, Seung-Chan Kim, and **Soo-Chul Lim**, “DeepTouch: Enabling Touch Interaction in Underwater Environments by Learning Touch-induced Inertial Motions”, *IEEE Sensors Journal*, 22(9), pp8924-8932, 2022
- [27] Kang-Won Lee, Sang-Hoon Kang, and **Soo-Chul Lim**, “Simple and Reliable Position Sense Assessment Under Different External Torques: Toward Developing a Post-Stroke Proprioception Evaluation Device”, *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, Vol 30, 2022
- [26] Kang-Won Lee, Dae-Kwan Ko, and **Soo-Chul Lim\***, "Toward vision-based high sampling interaction force estimation with master position and orientation for teleoperation", *IEEE Robotics and Automation Letters*, 6(4), pp. 6640-6646, 2021
- [25] Dae-Kwan Ko, Dong-Han Lee, and **Soo-Chul Lim\***, "Continuous Image Generation from Low-Update-Rate Images and Physical Sensors through a Conditional GAN for Robot Teleoperation", *IEEE Transactions on Industrial Informatics*, 17(3), pp 1978-1986, 2021
- [24] Won-Jo Jung, Kyung-Soo Kwak, and **Soo-Chul Lim\***, “Vision-Based Suture Tensile Force Estimation in Robotic Surgery”, *Sensors*, 21(1), 110, 2021
- [23] Semin Ryu, Dongbum Pyo, **Soo-Chul Lim\***, Dong-Soo Kwon\*, “Rendering Strategy to Counter Mutual Masking Effect in Multiple Tactile Feedback”, *Applied Sciences*, 10 (14), 4990, 2020
- [22] Hochul Shin, Hyeon Cho, Dongyi Kim, Dae-kwan Ko, **Soo-Chul Lim\*** and Wonjun Hwang\*, “Sequential Image-based Attention Network for Inferring Force Estimation without Haptic Sensor”, *IEEE Access*, Vol 7, pp 150237-150246, 2019
- [21] Minhyun Jung, Sujaya Kumar Vishwanath, Jihoon Kim, Dae-Kwan Ko, Myung-Jin Park, **Soo-Chul Lim\*** & Sanghun Jeon\*, “Transparent and Flexible Mayan-Pyramid-based Pressure Sensor using Facile-Transferred Indium tin Oxide for Bimodal Sensor Applications”, *Scientific Reports*, Volume 9, Article number: 14040, 2019
- [20] Sanghun Jeon, **Soo-Chul Lim**, Tran Quang Trung, Minhyun Jung, and Nae-Eung Lee, “Flexible Multimodal Sensors for Electronic Skin: Principle, Materials, Device, Array Architecture, and Data Acquisition Method”, *Proceedings of the IEEE*, 107(10), pp 2065 – 2083, 2019
- [19] Dongyi Kim, Hyeon Cho, Hochul Shin, **Soo-Chul Lim** and Wonjun Hwang, “An Efficient Three-Dimensional Convolutional Neural Network for Inferring Physical Interaction Force from Video”, *Sensors*, 19(16), 3579, 2019
- [18] Asif Khan, Dae-Kwan Ko, **Soo Chul Lim\***, Heung Soo Kim\*, “Structural vibration-based classification and prediction of delamination in smart composite laminates using deep learning neural network”, *Composites Part B: Engineering*, Vol 161, pp 386-594, 2019
- [17] Dong-Han Lee, Wonjun Hwang, **Soo-Chul Lim\***, “Interaction Force Estimation using Camera and Electrical Current without Force/Torque Sensor”. *IEEE Sensors Journal*, Vol 18, Issue: 21, 2018, doi: 10.1109/JSEN.2018.2868332
- [16] Semin Ryu, Dongbum Pyo, **Soo-Chul Lim**, Dong-Soo Kwon. “Mechanical Vibration Influences the Perception of Electrovibration”. *Scientific Reports*, 8(1), 4555, 2018. doi: 10.1038/s41598-018-

22865-x.

- [15] Hyundo Choi, Keehong Seo, Seungyong Hyung, Youngbo Shim and **Soo-Chul Lim\*** "Compact Hip-Force Sensor for a Gait-Assistance Exoskeleton System", *Sensors*, 18(2), 566, 2018.
- [14] Wonjun Hwang, **Soo-Chul Lim\***, "Inferring Interaction Force from Visual Information without Using Physical Force Sensors", *Sensors*, 17(11), 2455, 2017.
- [13] Hyun-Jun Hwang\*, **Soo-Chul Lim\***, Kyung-Chul Ok, Jin-Seong Park and Hak-Sung Kim (\* same contribution), "Photonic sintering via flash white light combined with deep UV and NIR for SrTiO<sub>3</sub> thin film vibration touch panel applications", *Nanotechnology*, Volume 27, Number 50, 505209, 2016
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- [11] Seung-Chan Kim and **Soo-Chul Lim\***, "Transferring Data from Smartwatch to Smartphone through Mechanical Wave Propagation", *Sensors*, 15(9), pp 21394-21406, 2015
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- [7] **Soo-Chul Lim**, Hyung-Kew Lee, and Joonah Park, "Role of combined tactile and kinesthetic feedback in minimally invasive surgery", *International Journal of Medical Robotics and Computer Assisted Surgery*, Vol 11, Issue 3, pp 360–374, 2015
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- [3] **Soo-Chul Lim**, Ki-Uk Kyung, Dong-Soo Kwon, "Presentation of Surface Height Profiles Based on Frequency Modulation at Constant Amplitude Using Vibrotactile Elements." *Advanced Robotics*, vol 25, Issue 16, pp. 2065-2081, 2011
- [2] **Soo-Chul Lim**, Ki-Uk Kyung, Dong-Soo Kwon, "Effect of Frequency Difference on Sensitivity of Beat Perception." *Experimental Brain Research*, vol 216, pp. 11-19, 2011
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## International Conference

- [16] Ying Yuan, Haichuan Che, Yuzhe Qin, Binghao Huang, Zhao-Heng Yin, Kang-Won Lee, Yi Wu, **Soo-Chul Lim**, Xiaolong Wang, "Robot Synesthesia: In-Hand Manipulation with Visuotactile Sensing", in IEEE International Conference on Robotics and Automation(ICRA), 2024
- [15] Hyeon Cho, Hyungho Kim, Dae-Kwan Ko, **Soo-Chul Lim**, Wonjun Hwang, "Which LSTM Type is Better for Interaction Force Estimation?," 2019 7th International Conference on Robot Intelligence Technology and Applications (RiTA)
- [14] M Jung, SK Vishwanath, J Kim, DK Ko, MJ Park, **SC Lim\***, S Jeon\*, "Flexible Multi-Modal Sensor for Electronic Skin," 2019 IEEE International Conference on Flexible and Printable Sensors and Systems
- [13] H-J Hwang, **S-C Lim**, J Park, and H-S Kim, "Photonic crystallization of Barium Strontium titanate thin films using visible flash light and UV irradiation," in Materials Research Society Spring Meeting, 2014, San Francisco, California, 2014.
- [12] S Pyo, J-I Lee, M-O Kim, T Chung, Y Oh, **S-C Lim**, J Park and J Kim, "Batch fabricated flexible tactile sensor based on carbon nanotube-polymer composites," in transducers & Eurosensors XXVII: The 17<sup>th</sup> International Conference on Solid-State Sensors, Actuators and Microsystems (TRANSDUCERS & EUROSENSORS XXVII), 2013, pp. 1004-1007
- [11] Bhoram Lee, Hyunjeong Lee, **Soo-Chul Lim**, Hyungkew Lee, Seungju Han, and Joonah Park "Evaluation of human tangential force input performance", CHI '12, Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, pp. 3121-3130
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- [9] B-K Han, S-C Kim, **S-C Lim**, D Pyo, and D-S Kwon, "Physical mobile interaction with kinesthetic feedback," in IEEE Haptics Symposium (HAPTICS), 2012, pp. 571-575
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- [6] S.-C. Kim, B.-K. Han, **S.-C. Lim**, A. Bianchi, K.-U. Kyung, and D.-S. Kwon, "Roly-poly: A Haptic Interface with a Self-righting Feature," *EuroHaptics 2010, Part I, LNCS 6191*, pp. 332-339, 2010
- [5] **S.-C. Lim**, S.-C. Kim, J.-H. Hwang, and D.-S. Kwon, "Physical Contact of Devices: Utilization of Beats for Interpersonal Communication," *EuroHaptics 2010, Part I, LNCS 6191*, pp. 348-353, 2010
- [4] **S.-C. Lim**, S.-C. Kim, K.-U. Kyung, and D.-S. Kwon, "Quantitative Analysis of Vibrotactile Threshold and the Effect of Vibration Frequency Difference on Tactile Perception," *SICE-ICASE 2006*, pp. 1927-1932, 2006
- [3] **S.-C. Lim**, K. Lee, and D.-S. Kwon, "Human friendly interfaces of robotic manipulator control for handicapped persons," *AIM 2003*. pp. 435-440 vol.1, 2003
- [2] J.-W. Min, K. Lee, **S.-C. Lim**, and D.-S. Kwon, "Human-robot interfaces for wheelchair control with body motion," *ICORR 2003*
- [1] J.-W. Min, K. Lee, **S.-C. Lim**, and D.-S. Kwon, "Human-friendly interfaces of wheelchair robotic system for handicapped persons," *IROS 2002*, pp. 1505-1510 vol.2., 2002

## Patent

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### International Patent

- [40] Won Jun Hwang, Ho Chul Sin, Dong Yi Kim, **Soo Chul Lim**, Dae Kwan Ko, “Method and apparatus for measuring interaction force based on sequential images using attention network”, US11301717, Apr. 12, 2022
- [39] Seung-chan Kim, SHIN Jungsoon, Taesung Jung, Du-sik Park, Joonah Park, **LIM Soochul**, “Key generating method and apparatus using characteristic of memory”, US10915621, Feb 9, 2021
- [38] Jungsoon Shin, Namjoon Kim, Joonah Park, **Soochul Lim**, Jaehyuk Choi, Tae-Sung Jung, “Method and apparatus with vein pattern authentication”, US10657400, May 19, 2020
- [37] Seung-chan Kim, SHIN Jungsoon, Taesung Jung, Du-sik Park, Joonah Park, **LIM Soochul**, “Key generating method and apparatus using characteristic of memory”, US10572651, Feb 25, 2020
- [36] **Soo Chul Lim**, Joonah Park, Hyun Jeong Lee, Seung Ju Han, “Device and method for providing tactile sensation,” US10331211, June 25, 2019
- [35] Jungsoon Shin, Namjoon Kim, Joonah Park, **Soochul Lim**, Jaehyuk Choi, Tae-Sung Jung, “Method and apparatus for authenticating user using vein pattern”, US10318832, June 11, 2019
- [34] **Soo Chul Lim**, Joonah Park, Hyung Jung Lee, Seung Ju Han, “Variable stiffness film, variable stiffness flexible display, and method of manufacturing the variable stiffness film”, US10257929, April 9, 2019
- [33] **Soo Chul Lim**, Joonah Park, “Apparatus, computer program product, and method for controlling vibration transfer between vibration devices”, EP2626770, April, 3, 2019
- [32] **Soo Chul Lim**, Joonah Park, “Apparatus and method for controlling vibration transfer between vibration devices”, US10152127, December 11, 2018
- [31] Wonhee Lee, Young Hun Sung, **Soochul LIM**, “Method and apparatus for estimating depth, and method and apparatus for training distance estimator”, US10068347, September 4, 2018
- [30] Namjoon KIM, Joonah Park, Du-sik Park, Jungsoon SHIN, **Soochul LIM**, “Method and apparatus for recognizing touch gesture”, US10067610, September 4, 2018
- [29] Seung-chan Kim, Jae Hyuk Choi, **Soo Chul Lim**, Joon Ah Park, Du-sik Park, Jung Soon Shin, “Certification device and method using image sensor”, US10038867, July 31, 2018
- [28] **Soochul LIM**, Joonah Park, Seungchan Kim, Jungsoon SHIN, “Portable device for outputting virtual vibration using vibrators”, US9911291, March 6, 2018
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- [26] 任洙彻, 朴浚我, “Controlling vibration transfer method and apparatus of a vibration device”, CN103246346, Jan 30, 2018, China
- [25] 任洙澈, 朴浚我, “Apparatus and method for controlling the inter-vibration device vibration transmission”, JP6222934, Nov 1, 2017, Japan
- [24] **Soochul LIM**, Joonah Park, Namjoon KIM, Du-sik Park, Jungsoon SHIN, “User input method for use in portable device using virtual input area”, US 9727131, Aug 8, 2017
- [23] Seung Ju Han, Joon Ah Park, Bho Ram Lee, Hyun Jeong Lee, **Soo Chul Lim**, “Apparatus and method for adjusting holographic image”, US9658596, May 23, 2017
- [22] **Soo-Chul Lim**, Jong Baeg Kim, Joon Ah Park, Soon Jae Pyo, Min Ook Kim, Jae Ik Lee, Tae Young Chung, “Apparatus and method for measuring tactile information”, US9568379, February 14, 2017

- [21] 李亨圭, 朴浚我, 任洙澈, 韩承周, 李宝蓝, “Haptic feedback devices, haptic feedback system and method of operation of the haptic feedback device”, CN103019371, Jan 11, 2017, China
- [20] **Soochul LIM**, Joonah Park, “Tactile feedback apparatuses and methods for providing sensations of writing”, US9535514, January 3, 2017
- [19] Bho Ram Lee, Joon Ah Park, Hyun Jeong Lee, **Soo Chul Lim**, Hyung Kew Lee, Seung Ju Han, “Interface controlling apparatus and method using force”, US9519350, December 13, 2016
- [18] Bho Ram Lee, Joon Ah Park, Hyun Jeong Lee, **Soo Chul Lim**, Hyung Kew Lee, Seung Ju Han, “Interface controlling apparatus and method using force”, US9501098, November 22, 2016
- [17] Bhoram Lee, Joonah Park, Hyun Jeong Lee, **Soo Chul Lim**, Seung Ju Han, “Apparatus and method for user input”, US9495035, November 15, 2016
- [16] **Soo Chul Lim**, Joon Ah Park, “Apparatus and method for controlling vibration transfer between vibration devices”, US9448627, September 20, 2016
- [15] **Soo Chul Lim**, Joon Ah Park, Hyun Jeong Lee, Seung Ju Han, Kyung Won Moon, “Apparatus and method for measuring bending of an object, by using an optical waveguide”, US9417143, August 16, 2016
- [14] Hyung Kew Lee, **Soo Chul Lim**, Joon Ah Park, Bho Ram Lee, Seung Ju Han, Hyun Jeong Lee, “Surgical tool, surgical robot having the same, and remote control robot system”, US9398934, July 26, 2016
- [13] 李亨圭, 朴浚我, 任洙澈, 韩承周, 李宝蓝, “Tactile transmission device, the operation method of the system, and tactile transmission device”, JP5903001, April 13, 2016, Japan
- [12] **Soo Chul Lim**, Joon Ah Park, Hyung Joo Kim, “Apparatus and method for controlling force to be used for motion of surgical robot” US9308646, April 12, 2016
- [11] Kyung-Won Moon, **Soo Chul Lim**, Joon Ah Park, Hyun Jeong Lee, Seung Ju Han, “Tactile sensation providing apparatus”, US9286774, March 15, 2016
- [10] Joonah Park, Hyung Kew Lee, **Soo Chul Lim**, Bho Ram Lee, Hyun Jeong Lee, Seung Ju Han, “Force sensing apparatus and operating method of force sensing apparatus”, US9259279, February 16, 2016
- [9] Bhoram Lee, Joonah Park, Hyun Jeong Lee, **Soo Chul Lim**, Seung Ju Han, “Apparatus and method for user input”, US9244549, January 26, 2016
- [8] **Soo Chul Lim**, Joon Ah Park, Sang Hun Jeon, Jong Jin Park, Jung Kyun Im “Tactile sensor” US9222846, December 29, 2015
- [7] **Soo Chul Lim**, Joon Ah Park, Jong Jin Park, Bho Ram Lee, Hyun Jeong Lee, Seung Ju Han “Apparatus and method for measuring tactile sensation”, US9182302, November 10, 2015
- [6] Hyung Kew Lee, Joon Ah Park, **Soo-Chul Lim**, Seung Ju Han, Bho Ram Lee, “Tactile feedback apparatus, system, and method of operating tactile feedback apparatus”, US9122308, 2015, USA, September 1, 2015
- [5] **Soo-Chul Lim**, Hyung Kew Lee, Joon Ah Park, Bho Ram Lee, Hyun Jeong Lee, Seung Ju Han, “Three dimensional (3D) tactile feedback apparatus and method”, US9111424, 2015, USA, August 18, 2015
- [4] **Soo-Chul Lim**, Joonah Park, Hyung-Kew Lee, Bhoram Lee, Seung-ju Han, “Apparatus and method for 3 degree of freedom (3DOF) tactile feedback”, US9030306, 2015, USA, May 12, 2015
- [3] Dong-Soo Kwon, Kyoobin Lee, Jae-Woong Min and **Soo-Chul Lim**, “Wheelchair control Sensor Using Movement of Shoulders and Wheelchair Drive Control Apparatus using The Same,” US 7080710, July 25, 2006, USA,
- [2] Dong-Soo Kwon, Kyoobin Lee, Jae-Woong Min and **Soo-Chul Lim**, “Wheelchair control Sensor

Using Movement of Shoulders and Wheelchair Drive Control Apparatus using The Same,”  
3999195, 2006, Japan

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Using Movement of Shoulders and Wheelchair Drive Control Apparatus using The Same,”  
200310125144.1, 2006, China

## Research Activity

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### Dongguk University

2025-2029 Development of Humanoid Autonomous Manipulation Intelligence Technology with  
Reduced Reliance on Real Data

Role : Principal Investigator

Sponsor : National Research Foundation of Korea

2025-2029 Robot Motion Generation AI based on Multimodal Vision/Tactile Information Driven by  
Language Model

Role : Principal Investigator

Sponsor : National Research Foundation of Korea

2024 Large-scale physical environment robot manipulation data

Role : Co-PI

Sponsor : National Information Society Agency

2023 Analysis of the input pattern of the recommendation matching algorithm of public R&D  
technology and corporate demand

Role : Principal Investigator

Sponsor : Korea Institute of Science and Technology Information

2022 Deep Learning-based Public R&D Technology–Market Demand Recommendation Algorithm  
Development

Role : Principal Investigator

Sponsor : Korea Institute of Science and Technology Information

2020-2023 Real-time Image Generation without Time Delay using GAN Network based on Robot  
Status Information and User Input during Robot Teleoperation

Role : Principal Investigator

Sponsor : National Research Foundation of Korea

2021-2023 Development of a High-Performance Multimodal Electronic Skin Sensor of Hybrid-Type  
and Intelligent module for robot manipulation

Role : Co-PI

PI : Bang. C.H (Physionics)

Other Co-PIs: M.S.Kim(KRISS), J.Y.Oh(KyungHee Univ.), Bang.C.H(Sungkyunkwan Univ)

Sponsor : Korea Ministry of Trade, Industry and Energy

2021-2023 Development of AI-based Motion Analysis, Coaching and Visualization Technology to  
Improve the Accuracy of User Posture and Enhance Trainer Coaching Efficiency during 1:N  
Non-face-to-face Sports Training

Role : Co-PI

PI : Park. J.S (Place A)

Other Co-PIs: S.C Kim(Sungkyunkwan Univ)

Sponsor : Korea Ministry of Trade, Industry and Energy

- 2020-2021 Development of Public R&D-Company Matching Network based on Technology-Commercialization Cases  
Role : Principal Investigator  
Sponsor : Korea Institute of Science and Technology Information
- 2017-2020 Inferring Interaction Force from Visual Information without Using Physical Force Sensors  
Role : Principal Investigator  
Sponsor : Samsung Electronics
- 2017-2019 Development of the artificial electronic skin that mimics human skin structure and functions for tactile and kinesthetic feedback in robotic surgery or prosthetic arm  
Role : Co-PI PI : M.S. Kim(KRISS)  
Other Co-PIs: Youn. K.S (Sogang Univ), Sven Behnke(Bonn Univ.)  
Sponsor : Korea Ministry of Trade, Industry and Energy
- 2018-2019 Digital Pen based on Visual information and IMU  
Role : Principal Investigator  
Sponsor : National Research Foundation of Korea
- 2017 Development of proprioception measurement system  
Role : Principal Investigator  
Sponsor : National Rehabilitation Center of Korea
- 2016-2018 360-Degree Stereo Virtual Environment-based Visual-Tactile integrated module technology  
Role : Principal Investigator  
Sponsor : National Research Foundation of Korea
- 2016 Multi-Modal-Based Smart NUI/NUX Based on Simple CAD  
Role : Principal Investigator  
Sponsor : ETRI, Korea
- 2016 Analysis of Distribution of Tactile Sensitivity of the Face for Evaluation of VR Device Fit  
Role : Principal Investigator  
Sponsor : Samsung Electronics
- 2016 Development of Steady Remote Motion Control System for 360 degree VR Movie  
Role : Co-PI PI : M.S.Kim(KRISS)  
Other Co-PIs: Kwak M.K (Dongguk Univ)  
Sponsor : Korean Film Council

#### **Samsung Advanced Institute of Technology, Samsung Electronics**

- 2014-2016 New input method for watch type device, Samsung Advanced Institute of Technology
- 2013-2014 Haptic interaction in mobile phone, Samsung Advanced Institute of Technology
- 2013 Three axis tactile sensor, Samsung Advanced Institute of Technology
- 2011-2013 Haptic Interaction for minimally invasive surgical robot, Samsung Advanced Institute of Technology

#### **Korea Military Academy**

- 2006-2008 Simulation training methods for efficient integrated operation of helicopter, Agency for Defense Development of Korea
- 2008 Simulation training methods for efficient integrated operation of tank simulators, Defense Acquisition Program Administration of Korea

**KAIST**

- 2009-2010 Contact-free Multipoint Realistic Interaction Technology Development, Ministry of Knowledge Economy
- 2010 TAXEL: Visio-haptic Display and Rendering Engine, Ministry of Knowledge Economy
- 2006 Texture Modeling and Development of Display Device, Ministry of Information and Communication
- 2003-2006 Intelligent Robotics Development Program, one of the 21st Century Frontier R&D Programs, Ministry of Commerce, Industry and Energy of Korea
- 2001-2003 Development of Intelligent Human-Robot Interaction Technology, Ministry of Science and Technology