

Kyoungchul (KC) Kong

Professor & Director of Exoskeleton Laboratory
Department of Mechanical Engineering
Korea Advanced Institute of Science and Technology (KAIST)
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Personal Information

Web-page:	http://robotics.kaist.ac.kr	Date of Birth:	September 22, 1981
Email:	kckong@kaist.ac.kr	Nationality:	Republic of Korea
Phone:	+82–42–350–3012	Place of Birth:	Republic of Korea

Education

Ph.D. University of California, Berkeley, 2009
Department of Mechanical Engineering
Dissertation Title: *Mechatronic Considerations for Human Assistive and Rehabilitation Systems*
Research Advisor: Professor Masayoshi Tomizuka

M.S. Sogang University, 2006
Department of Mechanical Engineering
Thesis Title: *Design and Control of Exoskeletal Robots for Patients and Elderly People*
Research Advisor: Professor Doyoung Jeon

B.Eng., B.S. Sogang University, 2004
Department of Mechanical Engineering (B.ENG)
Department of Physics (B.S.)
SUMMA CUM LAUDE, with Honors in the College of Engineering

Employment

Professor, Korea Advanced Institute of Science and Technology (KAIST), 2025 – present

Associate Professor, Korea Advanced Institute of Science and Technology (KAIST), 2019 – 2024

Chief Technical Officer, Angel Robotics, 2024 – present

Chief Executive Officer, Angel Robotics, 2017 – 2024

Associate Professor, Sogang University, 2015 – 2018

Assistant Professor, Sogang University, 2011 – 2014

Postdoctoral Research Fellow, University of California, Berkeley, 2009 – 2011

Awards (Selected)

2024 KAISTian of the Year, 2024
Korea Advanced Institute of Science and Technology

Gold Medal (Pilot's name: Mr. Seung Hwan Kim), Cybathlon 2024
Powered Exoskeleton Race
Role: team leader (Team KAIST)

Top 10 Representative Achievements, 2023
Ministry of Trade, Industry and Energy, Korea
The Best Technology of year 2023, "Powered Exoskeleton Robot for Complete paraplegics"

Robot Technology Award, 2023
Institute of Control, Robotics and Systems

Temasek Young Educator Award, 2022
The 13th Asian Control Conference (ASCC22)

Commendation by Minister of Science and ICT, 2022
Recognized for contributing to the promotion of research results at the Korea Science and Technology Fair

Commendation by Minister of Health and Welfare, 2021
Recognized for contributing to the healthcare industry with wearable robotics

Gold Medal (Pilot's name: Mr. Byeong Uk Kim), Cybathlon 2020
Powered Exoskeleton Race
Role: team leader (Team Angel Robotics)

Commendation by Prime Minister of Korea, 2019
Recognized for contributing to the organization of PyeongChang 2018 Paralympic Games

Young Researcher Award, 2018
Institute of Control, Robotics and Systems

Commendation by Minister of Commerce, Industry and Energy, 2017
Recognized for contributing to the robot industry with wearable robotics

Young Researcher Award, 2017
Korea Robotics Society

Journal Publications (Selected)

1. P. Slade, C. Atkeson, J. M. Donelan, H. Houdijk, K. A. Ingraham, M. Kim, K. KONG, K. L. Poggensee, R. Riener, M. Steinert, J. Zhang and S. H. Collins, "On human-in-the-loop optimization of human–robot interaction", Nature, Vol. 633, pp. 779-788, 2024

2. G. Sung, K. KONG, J. Choi, "What Is the Proper Gait Pattern for People With Paraplegia Who Wear Powered Exoskeletons?: Re-examining gait patterns of existing powered exoskeletons", IEEE Robotics and Automation Magazine, Vol. 31, No. 3, pp. 60-73, 2024

3. J. Youn, H. Kim, K. Shi, K. KONG, "Thermal Characteristic Modeling and Compensation for the Improvement of Actuator Homeostasis", IEEE/ASME Transactions on Mechatronics, Vol. 29, No. 4, pp. 3019-3027, 2024
4. T. Kim, K. KONG, "Plantar Flexion Muscle Force Estimation With a Soft Wearable Pneumatic Sensor System", IEEE/ASME Transactions on Mechatronics, Vol. 29, No. 4, pp. 2920-2928, 2024
5. K. Park, J. Choi and K. KONG, "Data-Driven Modeling for Gait Phase Recognition in a Wearable Exoskeleton Using Estimated Forces", IEEE Transactions on Robotics, Vol. 39, No. 4, pp. 3072-3086, 2023
6. S. An, J. Feng, E. Song, K. KONG, J. Kim and H. Choi, "High-Accuracy Hand Gesture Recognition on the Wrist Tendon Group Using Pneumatic Mechanomyography (pMMG)", IEEE Transactions on Industrial Informatics, Vol. 20, No. 2, pp. 1-12, 2023
7. K. Park, J. Choi and K. KONG, "Hybrid Filtered Disturbance Observer for Precise Motion Generation of a Powered Exoskeleton", IEEE Transactions on Industrial Electronics, Vol. 70, No. 1, pp. 646-656, 2023
8. J. Choi, K. Park, J. Park, D. Lee, E. Song, B. Na, S. Jeon, T. Kim, H. Choi, H. Woo, J. Lee, B, Kim, D. Rha and K. KONG, "The History and Future of the WalkON Suit: A Powered Exoskeleton for People With Disabilities", IEEE Industrial Electronics Magazine, Vol. 16, No. 4, pp. 16-28, 2022
9. K. Park, J. Choi and K. KONG, "Iterative Learning of Human Behavior for Adaptive Gait Pattern Adjustment of a Powered Exoskeleton", IEEE Transactions on Robotics, Vol. 38, No. 2, pp. 1395-1409, 2022
10. T. Kim, M. Jeong, and K. KONG, "Bio-inspired Knee Joint of a Lower-limb Exoskeleton for Misalignment Reduction," IEEE/ASME Transactions on Mechatronics, Vol. 27, No. 3, pp. 1223-1232, 2022
11. W. Huo, S. Mohammed, Y. Amirat, and K. KONG, "Fast Gait Mode Detection and Assistive Torque Control of an Exoskeletal Robotic Orthosis for Walking Assistance (E-ROWA)," IEEE Transactions on Robotics, Vol. 34, No. 4, pp. 1035-1052, 2018
12. J. Jung and K. KONG, "Mechanical Parameter Tuning Based on Iterative Learning Mechatronics Approach," IEEE/ASME Transactions on Mechatronics, Vol. 23, No. 2, pp. 906-915, 2018
13. J. Choi, B. Na, P.G. Jung, D.-W. Rha, K. KONG, "WalkON Suit: A Medalist in the Powered Exoskeleton Race of Cybathlon 2016," IEEE Robotics and Automation Magazine, Vol. 24, Issue 4, pp. 75-86, 2017
14. S. Oh and K. KONG, "High-Precision Robust Force Control of a Series Elastic Actuator," IEEE/ASME Transactions on Mechatronics, Vol. 22, No. 1, pp. 71-80, 2017
15. K. KONG, J. Bae, and M. Tomizuka, "A Compact Rotary Series Elastic Actuator for Human Assistive Systems," IEEE/ASME Transactions on Mechatronics, Vol. 17, No. 2, pp. 288-297, 2012