

Jeongryul Kim

PERSONAL PROFILE

Post-Doc

Center for Medical Robotics

Korea Institute of Science and Technology

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EDUCATION

Seoul National University

Mar. 2009 ~ Aug. 2015 Ph.D. in Mechanical & Aerospace Engineering

Mar. 2005 ~ Feb. 2009 B.S. in Mechanical & Aerospace Engineering

Advisor Prof. Jongwon Kim

Dissertation Design and Analysis of a Lizard – Inspired Legged Robot

EMPLOYMENT

Samsung Electronics

Company

Sept. 2015 ~ Aug. 2018 Senior Engineer in Mechatronics R&D Center

Korea Institute of Science and Technology

Sept. 2018 ~ Present Post-Doc in Center for Medical Robotics

SCHOLARSHIP

Sept. 2013 ~ Aug. 2015

Samsung Ph.D. Scholarship

PROJECT

Mar. 2009 ~ May 2010

Development of automatic welding robot using laser distance sensor

Mar. 2010 ~ Mar. 2011

Development of a leg mechanism for fast running legged robots

Mar. 2011 ~ Aug. 2015

Design and Control of a lizard-inspired legged robot

Sept. 2015 ~ Feb. 2017

Development of horizontal articulated robot for wafer transfer in vacuum chamber

Mar. 2017 ~ Aug. 2018

Development of high-speed horizontal articulated robot for wafer transfer

Sept. 2018 ~ Dec. 2018

Arthroscopic instrument development for minimally invasive surgery

Sept. 2018 ~ Present

Development of the surgical robots for the transoral and laparoscopic surgery through a single port.

Apr. 2019 ~ Present

Development of double-arm assistance robot

PUBLICATIONS

SCI/SCIE

1. Doyoung Chang, **Jeongryul Kim**, Dongkyu Choi, Kyu-Jin Cho, TaeWon Seo, and Jongwon Kim, “Design of a Slider-Crank Leg Mechanism for Mobile Hopping Robotic Platforms”, *Journal of Mechanical Science and Technology (JMST)*, 27(1), pp. 207~214, Jan. 2013. (*co-first author)
2. **Jeongryul Kim**, Hongmin Kim, Youngsoo Kim, Jaeheung Park, Hwa Soo Kim, TaeWon Seo and Jongwon Kim, “A New Lizard-inspired Robot with S-shaped Lateral Body Motions”, *IEEE/ASME Transactions on Mechatronics*, 25(1), pp. 130-141, Nov. 2019.
3. **Jeongryul Kim**, Seong-il Kwon, Keri Kim, “Novel Block Mechanism for Rolling Joints in Minimally Invasive Surgery”, *Mechanism and Machine Theory*, 147, 103774, May. 2020.

SCOPUS/KJCR/KCI

1. **Jeongryul Kim**, Jongwon Kim, “Recent research trends in biomimetic quadruped robots”, *Robot and Human*, 9(1), pp. 19~25, 2012. ISSN: 1738-4796, KJCR.
2. Chong Nam Chu, Haan Kim, **Jeongryul Kim**, Sung-Hyuk Song, Je-Sung Koh, Sungju Huh, ChangSu Ha, Jong Won Kim, Sung-Hoon Ahn, Kyu-Jin Cho, Seong Soo Hong, and Dong Jun Lee, “Development Fundamental Technologies for the Multi-Scale Mass-Deployable Cooperative Robots”, *Journal of the Korean Society of Precision Engineering*, 30(1), pp. 11~17, Jan. 2013, ISSN: 1225-9071, SCOPUS/KCI.
3. **Jeongryul Kim**, Jong-Won Kim, Jaeheung Park and Jongwon Kim, “Movement Analysis of Waist and Tail of Lizard for Controlling Yawing for Motion in Slow Trotting”, *Journal of Institute of Control, Robotics and Systems*, 19(7), pp. 620~625, 2013, ISSN: 1976-5622, SCOPUS/KCI.

CONFERENCE

International

1. Doyoung Chang, **Namsoo Kim**#, Dongkyu Choi, TaeWon Seo and Jongwon Kim, “Hopping Leg Design Using Crank-Slider Mechanism”, *International Workshop on Bio-Inspired Robots*, 2011.
(# His name was changed from Namsoo Kim to Jeongryul Kim)
2. Dongkyu Choi, **Jeongryul Kim**, Sunme Cho, Seungmin Jung and Jongwon Kim, “Rocker-Pillar: Design of the rough terrain mobile robot platform with caterpillar tracks and rocker bogie mechanism”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2012.
3. **Jeongryul Kim**, Hongmin Kim, Youngsoo Kim, Hwa Soo Kim and Jongwon Kim, “Design of Lizard-inspired Robot with Lateral Body Motion”, *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2018.

Domestic

1. Doyoung Chang, **Namsoo Kim**#, Jeonghan Gwon, Taewan Kim, Kyu-Yeul Lee, and Jongwon Kim, “Development of 4 axis automatic welding robot using laser distance sensor”, *Proceedings of Korean Society for Precision Engineering (KSPE) 2010 spring conference*, No. 5, pp. 43~44, 2010.
(# His name was changed from Namsoo Kim to Jeongryul Kim)
2. **Namsoo Kim**#, Doyoung Chang, Dongkyu Choi, and Jongwon Kim, “Leg Design Using Crank-Slider Mechanism for Hopping Robots”, *Proceedings of Korean Society for Precision Engineering (KSPE) 2011 spring conference*, No. 1, pp. 791~792, 2011.
(# His name was changed from Namsoo Kim to Jeongryul Kim)
3. Jong-Won Kim, **Jeongryul Kim**, Yonghee Han, and Jongwon Kim, “Kinematic analysis on the running phase of Zebra-tailed Lizard”, *Proceedings of Korean Society for Precision Engineering (KSPE) 2012 spring conference*, No. 1, pp. 271~272, 2012.
4. **Jeongryul Kim**, Jong-Won Kim, Dongkyu Choi, and Jongwon Kim, “Optimization of hind foot trajectory using four bar linkage for lizard inspired robot”, *Proceedings of Korean Society for Precision Engineering (KSPE) 2012 autumn conference*, No. 1, pp. 209~210, 2012.
5. Taegyun Kim, Sungkeun Yoo, Youngjae Jeon, **Jeongryul Kim**, Jongwon Kim, and Hwa Soo Kim, “Design of Novel Mechanism to Adjust the Distance and the Angle of the Cleaning Unit for the Facade Cleaning Robot, ROPE RIDE II”, *Proceedings of the Korean Society of Mechanical Engineers (KSME) 2015 autumn conference*, 2946-2948, 2015
6. Yonghwan Moon, **Jeongryul Kim**, Seung-il Kwon, and Keri Kim, “Design and Fabrication of Surgical Robot Manipulator Actuating Module”, *Proceedings of Institute of Control, Robotics and Systems (ICROS) 2019 conference*, pp. 189-190, 2019.

PATENTS

International

1. Jongwon Kim, Dongkyu Choi, Doyoung Chang, **Namsoo Kim#**, Jongkyun Oh, Seokwoo Lee, "Mobile robot including caterpillar and traveling wheel," WO2013108951A1, Jul. 25, 2013.

(# His name was changed from Namsoo Kim to Jeongryul Kim)

Domestic

1. Jongwon Kim, Doyoung Chang, **Namsoo Kim#**, Dongkyu Choi, " Leg for robot and robot having the same," 10-1344871-0000, Dec. 18, 2013.

(# His name was changed from Namsoo Kim to Jeongryul Kim)

2. (Application) Keri Kim, **Jeongryul Kim**, Seung-il Kwon, "Locking Mechanism", 2019-0020330, Feb. 21, 2019.

3. (Application) Keri Kim, **Jeongryul Kim**, Seung-il Kwon, "Articulating structure using rolling joint and pin coupling, and Tube insert device haivng the same", 2019-0041382, Apr. 9, 2019.

4. (Application) Keri Kim, **Jeongryul Kim**, Seung-il Kwon, "Articulating structure using rolling joint and projection member, and Tube insert device haivng the same", 2019-0056877, May 15, 2019.

5. (Application) Keri Kim, **Jeongryul Kim**, Seung-il Kwon, "Articulating structure having elastic member and Tube inserting device having the same", 2019-0117451, Sept. 24, 2019.

6. (Application) Keri Kim, **Jeongryul Kim**, Seung-il Kwon, "Articulating structure with enhanced bending force, and Tube insert device having the same", 2019-0132116, Oct. 23, 2019.

SKILLS

Programming

Matlab, Simulink, Labview, Arduino,

Finite Element Method

ANSYS (Mechanical), Hyperworks (Hypermesh, Inspire)

Dynamics Tools

ADAMS, Recurdyn, Matlab-Robotics

Design Tools

Solid Works, Solid Edge

REFERENCE

Prof. Jongwon Kim

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Prof. Keri Kim

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