

Seongsik PARK

PERSONAL DATA

Research Student	BIRTH: 28 NOV, 1988
Interaction and Robotics Research Center	CELL: +82-10-3589-4804
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Ph.D. candidate	WEB: http://march.kist.re.kr http://rnb.postech.ac.kr
Mechanical Engineering Department	Google Scholar
Pohang University of Science and Technology (POSTECH)	

RESEARCH INTERESTS

robot control using biosignal, variable stiffness control, human skill teach & transfer, programming by demonstration, human-robot interaction, motion segmentation, pattern recognition, machine learning, human motion analysis, evaluation & optimization

EDUCATION

<i>Current</i> MAR 2011	Ph.D. candidate (integrated course) in MECHANICAL ENGINEERING Pohang University of Science and Technology (POSTECH) , Pohang, Korea Advisor: Prof. Wan Kyun CHUNG GPA: 3.77/4.30
AUG 2010 MAR 2007	B.S. in MECHANICAL AND AEROSPACE ENGINEERING Seoul National University (SNU) , Seoul, Korea GPA: 3.43/4.30 standing 67/179.
FEB 2007 MAR 2004	Han-il High School , Gongju, Korea

RESEARCH EXPERIENCE

<i>Current</i> APR 2016	Research Student in MARCH Lab . Principal Investigator: Dr. Keehoon KIM Korea Institute of Science and Technology (KIST) , Seoul, Korea
<i>Current</i> MAR 2011	Research Assistant in Robotics Lab . Principal Investigator: Prof. Wan Kyun CHUNG Pohang University of Science and Technology (POSTECH) , Pohang, Korea

AWARDS AND HONORS

- DEC 2018 Best Paper Award in *KIST Robotics and Media Institute*
- JAN 2018 Best Paper Award in *2018 13th Korea Robotics Society Annual Conference*
Seongsik Park, Woongyong Lee, Wan Kyun Chung, and Keehoon Kim, "Ball trapping: impedance programming by demonstration using sEMG."
- MAY 2013 Best Paper Award in *2013 8th Korea Robotics Society Annual Conference*
Seongsik Park, and Wan Kyun Chung, "Simulation study of planar 2-DOF arm model for velocity-dependent stiffness modulation using iLQR algorithm."
- 2007-2010 National Science and Technology Scholarship of *Korea Student Aid Foundation*

PUBLICATIONS

Journal Articles

1. **Seongsik Park**, Woongyong Lee, Wan Kyun Chung, and Keehoon Kim, "Programming by Demonstration Using the Teleimpedance Control Scheme: Verification by an sEMG-Controlled Ball-Trapping Robot," *IEEE Transactions on Industrial Informatics*, vol. 15, no. 2, pp. 998-1006, 2019.

Journal Articles Under Review

2. **Seongsik Park**, Wan Kyun Chung, and Keehoon Kim, "Hierarchical Segmentation of Continuous Motions through sEMG Signal Analysis," *IEEE Robotics and Automation Letters*.
1. **Seongsik Park**, Wan Kyun Chung, and Keehoon Kim, "Training-Free Bayesian Self-Adaptive Classification for sEMG Pattern Recognition Including Motion Transition," *IEEE Transactions on Biomedical Engineering*.

Refereed Conference Papers

9. **Seongsik Park**, and Wan Kyun Chung, "Localizing a needle tip using 2D microscope images and detecting vertical approach of a needle based on focus measures for intracellular microneedle insertion," in *Intelligent Robots and Systems (IROS), 2016 IEEE/RSJ International Conference on*, 2016, pp. 2567-2571.
8. **Seongsik Park**, and Wan Kyun Chung, "Tele-impedance control of virtual system with visual feedback to verify adaptation of unstable dynamics during reach-to-point tasks," in *Biomedical Robotics and Biomechanics (BioRob), 2016 6th IEEE RAS/EMBS International Conference on*, 2016, pp. 1283-1289.
7. **Seongsik Park**, Il Hong Suh, and Wan Kyun Chung, "Dynamic motion phase segmentation using sEMG during countermovement jump based on hidden semi-Markov model," in *Robotics and Automation (ICRA), 2015 IEEE International Conference on*, 2015, pp. 1461-1467.
6. **Seongsik Park**, and Wan Kyun Chung, "Dynamic motion phase segmentation using electromyogram," in *Ubiquitous Robots and Ambient Intelligence (URAI), 2015 12th International Conference on*, 2015, pp. 202-203.
5. **Seongsik Park**, and Wan Kyun Chung, "Decoding surface electromyogram into dynamic state to extract dynamic motor control strategy of human," in *Intelligent Robots and Systems (IROS), 2014 IEEE/RSJ International Conference on*, 2014, pp. 1427-1433.

4. **Seongsik Park**, and Wan Kyun Chung, "Autonomous segmentation of motion primitive including muscular activation using variational Bayesian mixture of Gaussian," in *Ubiquitous Robots and Ambient Intelligence (URAI), 2013 10th International Conference on*, 2013, pp. 5-9.
3. Minjae Kim, **Seongsik Park**, and Wan Kyun Chung, "Flexible polymer-based micro needle array sEMG sensor," in *Ubiquitous Robots and Ambient Intelligence (URAI), 2013 10th International Conference on*, 2013, pp. 1-4.
2. Min Jun Kim, **Seongsik Park**, and Wan Kyun Chung, "Nonlinear robust internal loop compensator for robust control of robotic manipulators," in *Intelligent Robots and Systems (IROS), 2012 IEEE/RSJ International Conference on*, 2012, pp. 2742-2748.
1. **Seongsik Park**, and Wan Kyun Chung, "Combined method of weighted least norm and gradient projection for avoiding joint limit," in *Ubiquitous Robots and Ambient Intelligence (URAI), 2011 8th International Conference on*, 2011, pp. 798-799.

LANGUAGES, SKILLS AND ABILITIES

Languages	Korean (mothertongue) English (intermediate)
Computer Skills	MATLAB, C/C++, \LaTeX , Real-Time OS (RTX), OpenSim, Visual Studio, SolidWorks, RoboticsLab
Hardware and Equipments	Manipulator (Schunk 7-DOF LWA3, Neuromeka Indy RP) sEMG sensors (Delsys, Noraxon, Thalmic MYO) Motion capture (MotionAnalysis)

INTERESTS AND ACTIVITIES

Badminton, Swimming, Photograph, Pungmul (Korean traditional music), Bicycle