DAEHYUNG PARK

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AFFILIATION

Associate Professor, School of Computing, Korea Advanced Institute of Science and Technology (KAIST) 2024-Present
Graduate School of AI, Robotics Program, and GST at KAIST

Deputy Director, KI for Robotics 2025-Present

Board member, K-Humanoid Alliance (K-휴머노이드 연합 총괄위원회) 2025-Present

Director, Robust Intelligence & Robotics Laboratory (RIRO Lab) 2020-Present
- Developing the capabilities of real robots so that they can autonomously assist and collaborate with people in real world.
- Working with various mobile manipulation platforms for industrial, home-service, and healthcare scenarios.

EDUCATION

Ph.D. in Robotics, the School of Interactive Computing 2012-2018
Georgia Institute of Technology, Atlanta, Georgia
Thesis: "A Multimodal Execution Monitor for Assistive Robots"
Advisor: Dr. Charles C. Kemp

M.S. in Computer Science, Concentration in Computer Science Intelligent Robotics (CSIR) May 2008
University of Southern California, Los Angeles, California
Research: "Movement reproduction and obstacle avoidance with dynamic movement primitives and potential fields"
Advisor: Prof. Stefan Schaal

B.E. in Systems Science, Concentration in Systems Science and Applied Informatics March 2006
Osaka University, Osaka, Japan
Thesis: "Dynamic Turning Control for A Humanoid Robot HRP-2"
Advisor: Prof. Tatsuo Arai

PAST POSITIONS

Assistant Professor, School of Computing, Korea Advanced Institute of Science and Technology 2020-2024

Postdoctoral Associate, Massachusetts Institute of Technology 2018-2020
Computer Science and Artificial Intelligence Laboratory (CSAIL), Prof. Nicholas Roy

Graduate Research Assistant, Georgia Tech 2012- 2018
Institute for Robotics and Intelligent Machines, Dr. Charles C. Kemp

Research Engineer, Samsung Electronics, Suwon, Republic of Korea 2008-2012
Mechatronics R&D Center

Graduate Research Assistant, University of Southern California 2007-2008
Department of Computer Science, Dr. Stefan Schaal

Research Assistant, Osaka University 2005-2006
Department of Systems Science, Dr. Tatsuo Arai

SCHOLARSHIPS & AWARDS

Best Student Paper Award, The International Conference on Robot Intelligence Technology and Applications (RiTA) 2024
Outstanding Planning Paper Award, IEEE *International Conference on Robotics and Automation* (ICRA) 2023
Google Research Scholar Award, Google Inc. 2022
Outstanding Navigation paper finalist, IEEE *International Conference on Robotics and Automation* (ICRA) 2022
Best Student Paper Award, The International Conference on Robot Intelligence Technology and Applications (RiTA) 2022
Outstanding Paper Award, KRoC (한국로봇학회, 우수논문상) 2022
Academic Achievement Award (for student over 3.9/4.0 GPA), University of Southern California 2008
Government-sponsored full scholarship by Japanese and Korean governments 2001-2006

TEACHING EXPERIENCE

Instructor, KAIST

Course#	Title	Term
CS577	Robot Learning and Interaction	2023, 2025
CS477	Introduction to Intelligent Robotics	2022, 2024
CS470	Introduction to Artificial Intelligence	2022-2025
CS592	Special Topics in CS <Robot Learning and Interaction>	2021-2022
CS492	Special Topics in CS <Introduction to Intelligent Robotics>	2020-2021

PROFESSIONAL SERVICE & OUTREACH

Board & Committee

- Demo Chair, Conference on Robot Learning (CoRL) 2025
- Director, Korean Robotics Society 2025-Present
- Publication Chair, The International Conference on Robot Intelligence Technology and Applications (RiTA) 2025
- Program Chair, The International Conference on Robot Intelligence Technology and Applications (RiTA) 2024
- Organizer, "Designing Interactive Humanoids: Learning Tasks through Interaction with Humans", Workshop at Humanoids 2024
- Organizer, "Experiment-oriented Locomotion and Manipulation Research", Workshop at RSS 2023
- Organizer, "Human-Agent/Robot Interaction in Healthcare and Medicine", Special session at RO-MAN 2023
- Member, Award Subcommittee for ICRA 2022, 2023
- Member, Organizing Committee for KRoC 2022-2024
- Member, Organizing Committee for RiTA 2022
- Member, Program Committee for the NeurIPS 2021 Workshop on Metacognition in the Age of AI 2021

Editor Services

- Associate Editor – RA-L, AURO, ISR, ICRA, RiTA

Media Coverage

- YTN Science Today & 20+ News covered our RSS'25 INR-DOM, South Korea Aug. 2025
- MERRIC (기계 로봇 연구정보센터) & Robot News (로봇 신문), South Korea 2021
- Generation Robot, *Mouser.com*, USA March 2018
- IEEE Spectrum's Video Friday Sept. 2017
- Documentary for robotics and artificial intelligence, *SBS*, South Korea May 2014

INVITED TALKS & LECTURES (SELECTED)

"Toward Generalist Robots: Pathways to Precise, Constraint-Aware Behavior" International Robot Learning Symposium, 2025
"Robotic Companion Tomorrow: Enhancing Safety Intelligence in Robots" International Elite Robotics Summer School, 2024
"Robotic Companion: From language grounding to safe execution" - *Workshop on Articulate Robots*, RSS, 2023
Workshop on Experiment-oriented Locomotion and Manipulation Research, RSS, 2023
Seoul National University, AI Robotics Seminar, 2023

"Human-Centered Robotics: How to fill the gap between humans and robots" - *Cornell University*, Robotics Seminar, 2022

"Human-Centered Robotics: Collaborative Manipulation" - Int'l Conf. on Ubiquitous Robotics, 2021
Korean Artificial Intelligence Association, 2021

"Learning for Human-Centered Robotic Manipulation" - GWU, UIUC, UMN, UMASS, KAIST. 2020
"Learning for Intelligent Robotic Manipulation" -
Int'l Workshop on Intelligent Robot Teammates for Complex Missions in Unstructured Environments IIT Delhi, 2020

PROFESSIONAL AFFILIATIONS

Member, IEEE Robotics and Automation Society 2014-Present
Member, Korea Robotics Society (KROS, 한국로봇학회) 2021-Present
Member, Institute of Control Robotics and Systems (ICROS) 2022
Member, Korean Institute of Information Scientists and Engineers (한국정보과학회) 2022-Present

PUBLICATIONS

International Journal Articles:

[11] N. Oh, D. Kim, J. Bang, R. Paul, **D. Park**, "C2F-SPACE: Coarse-to-Fine Space Grounding for Spatial Instructions using Vision-Language Models" (under review)

[10] M. Cho, J. Jang, **D. Park**. "ILCL: Inverse Logic-Constraint Learning from Temporally Constrained Demonstrations," *IEEE Robotics and Automation Letters (RA-L)*, [under review]

[9] Y. Kim, D. Kim, J. Choi, J. Park, N. Oh, **D. Park**. "A Survey on Integration of Large Language Models with Intelligent Robots," Intelligent Service Robotics (ISR), August 2024

[8] J. Jang, M. Song, **D. Park**. "Inverse Constraint Learning and Generalization by Transferable Reward Decomposition," *IEEE Robotics and Automation Letters (RA-L)*, 2023

[7] Y. Kim, J. Kim, **D. Park**. "GraphDistNet: A Graph-based Collision-distance Estimator for Gradient-based Trajectory," *IEEE Robotics and Automation Letters (RA-L)*, 2022

[6] T. M. Howard, E. Stump, J. Fink, J. Arkin, R. Paul, **D. Park**, S. Roy, D. Barber, R. Bendell, K. Schmeckpeper,J. Tian, J. Oh, M. Wigness, L. Quang, B. Rothrock, J. Nash, M. R. Walter, F. Jentsch, N. Roy. "An Intelligence Architecture for Grounded LanguageCommunication with Field Robots," *Field Robotics*, 2022.

[5] **J. Arkin***, **D. Park***, S. Roy, M. R. Walter, N. Roy, T. M. Howard, and R. Paul. "Multi-Modal Estimation and Communication of Latent Semantic Knowledge for Robust Execution of Robot Instructions," *The International Journal of Robotics Research* (IF: 6.134), 2020 **(*- authors contributed equally)**

[4] **D. Park**, Y. Hoshi, H. P. Mahajan, H. Kim, Z. Erickson, W. A. Rogers, and C. C. Kemp. "Active Robot-Assisted Feeding with a General-Purpose Mobile Manipulator: Design, Evaluation, and Lessons Learned," *Robotics and Autonomous Systems* (IF: 2.928), 2019

[3] A. Kapusta, P. Grice, H. Clever, Y. Chitalia, **D. Park**, and Charles C. Kemp. "A System for Bedside Assistance that Integrates a Robotic Bed and a Mobile Manipulator," *PLOS One* (IF: 2.776), 2019

[2] **D. Park**, Y. Hoshi, and C. C. Kemp. "A Multimodal Anomaly Detector for Robot-Assisted Feeding Using LSTM-based Variational Autoencoder," *IEEE Robotics and Automation Letters (RA-L)*, 2018. [Presentation at *IEEE ICRA 2018*]

[1] **D. Park**, H. Kim, and C. C. Kemp. "Multimodal Anomaly Detection for Assistive Robots," *Autonomous Robots* (IF: 3.634), 2018.

International Conference Articles:

[29] Y. Kim, N. Oh, J. Park, T. Thamronglak, Daehyung Park, "A Visuo-Tactile Data Collection System with Haptic Feedback for Coarse-to-Fine Imitation Learning" in Proceedings of Robot Intelligence Technology and Applications (RiTA 2025 accepted)

[28] K. Koh, M. Jung, S. S. Lee, **D. Park**, " SuReNav: Superpixel Graph-based Constraint Relaxation for Navigation in Over-constrained Environments" (under review)

[27] J. Park, G.Eo, J. Min, J. Park, Y. Kim, **D. Park**, "ForeSight: Autoregressive Plan Monitoring for Efficient Long-Horizon Replanning and Execution" (under review)

[26] N. Oh, J. Jang, M. Jung, **D. Park**, "DiSPo: Diffusion-SSM based Policy Learning for Coarse-to-Fine Action Discretization" (under review)

[25] M. Song, J. Ha, B. Park, **D. Park**, "Implicit Neural-Representation Learning for Elastic Deformable-Object Manipulation" in Proceedings of Robotics: Science and Systems (RSS), 2025

[24] J. W. Han, **D. Park**, M. Kim, "A Constrained Nonlinear Disturbance Observer for Robot Control." in Proceedings of IEEE International Conference on Robotics and Automation (ICRA 2024), Yokohama, Japan, May 2024

[23] J. Kim, J. Koh, S. Lee, Y. Park, **D. Park**, "Reactive Constraint Relaxation for Urban Environment Navigation." in Proceedings of Robot Intelligence Technology and Applications (RiTA 2024), Ulsan, Korea, Dec. 2024 [**Best Student Paper Award**]

[22] M. Song, Y. Kim, **D. Park**, "Graph-based 3D Collision-distance Estimation Network with Probabilistic Graph Rewiring," *IEEE Int'l. Conf. on Robotics and Automation (ICRA)*, 2024. (Submitted).

[21] D. Kim, N. Oh, D. Hwang, **D. Park**, "LINGO-Space: Language-conditioned Incremental Grounding for Space," *Association for the Advancement of Artificial Intelligence (AAAI)*, 2024. (Accepted)

[20] D. Kim, Y. Kim, J. Jang, M. Song, W. Choi, **D. Park**, "SGGNet2: Speech-Scene Graph Grounding Network for Speech-guided Navigation." IEEE International Conference on Robot & Human Interactive Communication (RO-MAN), 2023.

[19] Kim, K., **Park, D.**, Kim, M. J. "Hybrid Reachability Tree with Action Sequence Sampling for Robot Task and Motion Planning," *IEEE Int'l. Conf. on Robotics and Automation (ICRA)*, 2023.

[18] Yoon, M., Kang, M., **Park, D.**, Yoon, S. "Learning-based Initialization of Trajectory Optimization for Path-following Problems of Redundant Manipulators," *IEEE Int'l. Conf. on Robotics and Automation (ICRA)*, 2023. [**Outstanding Planning Paper Award**]

[17] D. Kim, J. Kim, M. Cho, **D. Park**. "Natural Language-Guided Navigation using Scene Graph", *Int'l. Conf. on Robot Intelligence Technology and Applications* (RiTA), 2022. **[Best Student award]**

[16] H. Ryu, M. Yoon, **D. Park**, S. Yoon. "Confidence-based Robot Navigation under Sensor Occlusion with Deep Reinforcement Learning," *IEEE Int'l. Conf. on Robotics and Automation (ICRA)*, 2022. **[Outstanding Navigation award finalist]**

[15] **S. Li*, D. Park*, Y. Sung***, Julie A. Shah, and Nicholas Roy, "Reactive Task and Motion Planning under Temporal Logic Specifications", *IEEE Int'l. Conf. on Robotics and Automation* (ICRA2021) (***- authors contributed equally**)

[14] **D. Park**, M. Noseworthy, R. Paul, S. Roy, and N. Roy, "Inferring Task Goals and Constraints using Bayesian Nonparametric Inverse Reinforcement Learning," *Conference on Robot Learning (CoRL2019)* [**Oral Presentation**, **5% Oral Acceptance Rate**]

[13] M. Noseworthy, R. Paul, S. Roy, **D. Park**, and N. Roy, "Task-Conditioned Variational Autoencoders for Learning Movement Primitives," *Conference on Robot Learning (CoRL2019)* [27.6% Acceptance Rate]
[12] S. Roy, M. Noseworthy, R. Paul, **D. Park** and N. Roy. "Leveraging Past References for Robust Language Grounding", *Conference on Computational Natural Language Learning (CoNLL 2019)*
[11] D. Nyga, S. Roy, R.Paul, **D. Park**, M. Pomarlan, M. Beetz, and N. Roy. "Grounding Robot Plans from Natural Language Instructions with Incomplete World Knowledge", *Conference on Robot Learning (CoRL2018)* [31% Acceptance Rate]
[10] J. Arkin, R. Paul, **D. Park**, S. Roy, N. Roy and T. M. Howard. "Real-Time Human-Robot Communication for Manipulation Tasks in Partially Observed Environments", *International Symposium on Experimental Robotics (ISER2018)*
[9] H. M. Clever, A. Kapusta, **D. Park**, Z. Erickson, Y. Chitalia, and C. C. Kemp. "3D Human Pose Estimation on a Configurable Bed from a Pressure Image", *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS2018)*.
[8] **D. Park**, H. Kim, Y. Hoshi, Z. Erickson, A. Kapusta, and C. C. Kemp. "A Multimodal Execution Monitor with Anomaly Classification for Robot-Assisted Feeding", *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS2017)*.
[7] **D. Park**, Z. Erickson, T. Bhattacharjee, and C. Kemp. "Multimodal Execution Monitoring for Anomaly Detection During Robot Manipulation," *IEEE International Conference on Robotics and Automation (ICRA2016)*.
[6] T. Bhattacharjee, A. A Shenoi, **D. Park**, J. Rehg, and C. Kemp. "Combining Tactile Sensing and Vision for Rapid Haptic Mapping," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS2015).*
[5] A. Kapusta, **D. Park**, and C. Kemp, "Task-Centric Selection of Robot and Environment Initial Configurations to Perform Assistive Tasks," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS2015).*
[4] **D. Park**, A. Kapusta, J. Hawke, and C. Kemp. "Interleaving Planning and Control for Efficient Haptically-guided Reaching in Unknown Environments," *IEEE-RAS International Conference on Humanoid Robots (Humanoids 2014).*
[3] **D. Park**, A. Kapusta, Y. Kim, J. Rehg, and C. Kemp. "Learning to Reach into the Unknown: Selecting Initial Conditions When Reaching in Clutter," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS2014).*
[2] H. Hoffmann, P. Pastor, **D. Park**, and S. Schaal. "Biologically-inspired dynamical systems for movement generation: Automatic real-time goal adaptation and obstacle avoidance," *IEEE International Conference on Robotics and Automation*, 2009.
[1] **D. Park**, H. Hoffmann, P. Pastor, and S. Schaal. "Movement reproduction and obstacle avoidance with dynamic movement primitives and potential fields," *IEEE-RAS International Conference on Humanoid Robots*, 2008. [**Oral presentation**]

Selected Domestic Conference Articles:
- S. Hyun, M. Cho, D. Park, "Automated Reset System for Real-world Shallow Depth-Insertion Policy Learning," Institute of Control, Robotics and Systems (ICROS), 2025. [**Best Undergraduate Paper Award**]
- M. Song, B. Park, D. Park, "Development of VR Teleoperation System and Collecting Demonstration for Deformable Object Manipulation," Institute of Control, Robotics and Systems (ICROS), 2024. [**Best Undergraduate Paper Award**]
- U. Rakhman, J. Yoo, Y. Kim, D. Hwang, S. Hong, and **D. Park**, "Reactive Task Planning using Scene Graph for Robust Robotic Manipulation," *Korea Robotics Society Annual Conference (KRoC), 2022*. [**Outstanding Paper Award**]

Selected Patents:
- K. Lee, Y. Hong, C. An, and **D. Park**. "Motor control apparatus and motor control method thereof." US 2011/0181223 A1, Jul. 28, 2011.
- **D. Park**, K. Lee, C. An, and Y. Hong. "Teaching and playback method based on control of redundancy resolution for robot and computer-readable medium controlling the same." US 2011/0093119 A1, Apr. 21, 2011.