

Dongho Kang

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RESEARCH INTERESTS

The goal of my research is to broaden the skill set of humanoid robots and enhance their ability to generate natural and versatile behaviors by integrating advanced control strategies with data-driven character animation techniques.

PROFESSIONAL AFFILIATIONS & ACTIVITIES

RAI Institute, Zurich, Switzerland

- Research Scientist

Jun 2025 – Present

NVIDIA, Zurich, Switzerland

- Deep Learning Intern

Jun 2018 – Dec 2018

CNP Technology Inc., Seoul, South Korea

- CAD Engineer

Dec 2011 – Mar 2014

EDUCATION

ETH Zürich, Zurich, Switzerland

- Doctor of Science in Computer Science

Apr 2020 – Aug 2025

- Main advisor: Prof. Dr. Stelian Coros
- Second advisor: Prof. Dr. Marco Hutter
- Thesis: Animal Motion Imitation for Adaptive and Lifelike Locomotion Control of Legged Robots

- Master of Science in Mechanical Engineering

Sep 2016 – Aug 2019

- Advisor: Prof. Dr. Marco Hutter
- Thesis: End-to-End Collision Avoidance from Depth Input with Memory-based Deep RL

Seoul National University, Seoul, South Korea

- Bachelor of Science in Mechanical Engineering & Computer Science

Mar 2009 – Aug 2016

- Advisor: Prof. Dr. Dongjun Lee

PUBLICATIONS

JOURNALS

- [1] Matthias Heyrman, Chenhao Li, Victor Klemm, Dongho Kang, Stelian Coros, and Marco Hutter, “Multi-Domain Motion Embedding: Expressive Real-Time Mimicry for Legged Robots,” in *The International Journal of Robotics Research (IJRR)*, 2026 (under review.)
- [2] Lukas Molnar, Jin Cheng, Gabriele Fadini, Dongho Kang, Fatemeh Zargarbashi, and Stelian Coros, “Whole-body Inverse Dynamics MPC for Legged Loco-manipulation,” in *IEEE Robotics and Automation Letters (RA-L)*, 2026.
- [3] Jin Cheng, Dongho Kang, Gabriele Fadini, Guanya Shi, and Stelian Coros, “RAMBO: RL-augmented Model-based Optimal Control for Whole-body Loco-manipulation,” in *IEEE Robotics and Automation Letters (RA-L)*, Sep 2025.
- [4] Taerim Yoon, Dongho Kang, Seungmin Kim, Jin Cheng, Minsung Ahn, Stelian Coros, and Sungjoon Choi, “Spatio-Temporal Motion Retargeting,” in *IEEE Transactions on Robotics (T-RO)*, Aug 2025.
- [5] Dongho Kang, Jin Cheng, Miguel Zamora, Fatemeh Zargarbashi, and Stelian Coros, “RL + Model-based Control: Using On-demand Optimal Control to Learn Versatile Legged Locomotion,” in *IEEE Robotics and Automation Letters (RA-L)*, Oct 2023.

CONFERENCES

- [1] Taerim Yoon, Dongho Kang, Kisang Park, Junha Cha, Stelian Coros, Sungjoon Choi, “Learning Unions of Convex Sets via Invertible Latent Decomposition for Path Planning,” in *Conference on Robot Learning (CoRL)*, 2026.
- [2] Taerim Yoon, Dongho Kang, Jin Cheng, Fatemeh Zargarbashi, Yijiang Huang, Minsung Ahn, Stelian Coros, and Sungjoon Choi, “Teaching Robots Like Dogs: Learning Agile Navigation from Luring, Gesture, and Speech,” in *Conference on Robot Learning (CoRL)*, 2026.

- [3] Yarden As, Chengrui Qu, Benjamin Unger, Dongho Kang, Max van der Hart, Laixi Shi, Stelian Coros, Adam Wierman, Andreas Krause, “SPiDR: A Simple Approach for Zero-Shot Safety in Sim-to-Real Transfer,” in *Neural Information Processing Systems (NeurIPS)*, 2025.
- [4] Fatemeh Zargarbashi, Jin Cheng, Dongho Kang, Robert Sumner, and Stelian Coros, “RobotKeyframing: Learning Locomotion with High-Level Objectives via Mixture of Dense and Sparse Rewards,” in *Conference on Robot Learning (CoRL)*, 2024.
- [5] Adrian Hartmann, Dongho Kang, Fatemeh Zargarbashi, Miguel Angel Zamora Mora, and Stelian Coros, “Deep Compliant Control for Legged Robots,” in *International Conference on Robotics and Automation (ICRA)*, 2024.
- [6] Daniel Widmer, Dongho Kang (equal contribution), Bhavya Sukhija, Jonas Hübötter, Andreas Krause, and Stelian Coros, “Tuning Legged Locomotion Controllers via Safe Bayesian Optimization,” in *Conference on Robot Learning (CoRL)*, 2023.
- [7] Dongho Kang, Flavio De Vincenti, Naomi C. Adam, and Stelian Coros, “Animal Motions on Legged Robots Using Nonlinear Model Predictive Control,” in *International Conference on Intelligent Robots and Systems (IROS)*, 2022.
- [8] Dongho Kang, Simon Zimmermann, and Stelian Coros, “Animal Gaits on Quadrupedal Robots using Motion Matching and Model-Based Control,” in *International Conference on Intelligent Robots and Systems (IROS)*, 2021.
- [9] Flavio De Vincenti, Dongho Kang, and Stelian Coros, “Control-Aware Design Optimization for Bio-Inspired Quadruped Robots,” in *International Conference on Intelligent Robots and Systems (IROS)*, 2021.
- [10] Changu Kim, Hyunsoo Yang, Dongho Kang and Dongjun Lee, “2-D Cooperative Localization with Omni-Directional Mobile Robots,” in *International Conference on Ubiquitous Robots and Ambient Intelligence*, 2015.

THESIS

- [1] Dongho Kang, “Animal Motion Imitation For Adaptive and Lifelike Control of Legged Robots,” Doctoral thesis, Department of Computer Science, ETH Zürich, 2025.
- [2] Dongho Kang, “End-to-End Collision Avoidance from Depth Input with Memory-based Deep RL,” Master’s thesis, Department of Mechanical and Process Engineering, ETH Zürich, Aug 2019.

INVITED TALK

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|---|----------|
| ▪ Institute of Robotics and Mechatronics, German Aerospace Center (DLR)
Oberpfaffenhofen-Weßling, Germany | Jul 2026 |
| ▪ Illinois Robotics Group, University of Illinois at Urbana-Champaign
Champaign-Urbana, Illinois, United States (online) | Mar 2026 |
| ▪ Laboratory for Intelligent Decision and Autonomous Robots, Georgia Tech
Atlanta, Georgia, United States | Feb 2026 |
| ▪ Department of Artificial Intelligence, Korea University
Seoul, South Korea | Jan 2026 |
| ▪ Department of Computer Science and Engineering, Seoul National University
Seoul, South Korea | Jan 2026 |
| ▪ Machine Perception for Human Understanding, AI+X Summit 2025
Zurich, Switzerland | Oct 2025 |
| ▪ Department of Mechanical Engineering, Seoul National University
Seoul, South Korea (online) | Oct 2025 |
| ▪ Artificial Intelligence Graduate School, UNIST
Ulsan, South Korea (online) | Oct 2025 |
| ▪ Biomimetic Robotics Lab, Massachusetts Institute of Technology
Cambridge, Massachusetts, United States (online) | Aug 2024 |
| ▪ Johou Systems Kougaku Laboratory, University of Tokyo
Tokyo, Japan | May 2024 |

	▪ Suzumori Laboratory, Tokyo Institute of Technology Tokyo, Japan	May 2024
AWARDS & SCHOLARSHIPS	▪ Birkigt Scholarship, ETH Zürich Stipendiary scholarship for international master student. ▪ Eminence Scholarship, Seoul National University Full-tuition scholarship for one academic semester for outstanding academic performance. ▪ Development Fund Scholarship, Seoul National University Full-tuition scholarship for one academic year for outstanding academic performance.	Feb 2018 Aug 2014 Feb 2010
TEACHING EXPERIENCE	ETH Zürich, Zurich, Switzerland ▪ Teaching Assistant, Stochastics and ML (A. Streich, C. Cotrini, F. Friedrich) ▪ Teaching Assistant, Introduction to Machine Learning (F. Perez-Cruz, F. Yang) ▪ Teaching Assistant, Computer Science (M. Fischer, F. Friedrich) ▪ Teaching Assistant, Digital Humans (S. Coros, Siyu Tang) ▪ Teaching Assistant, Linear Algebra (Ö. Imamoglu, O. Sorkine-Hornung) ▪ Teaching Assistant, Computational Models of Motion (S. Coros, B. Thomaszewski) ▪ Teaching Assistant, Visual Computing (S. Coros, M. Pollefeys) Seoul National University, Seoul, South Korea ▪ Mentor, SNU Samsung Convergence Software Course Program ▪ Teaching Assistant, MAE 446.204A: Dynamics ▪ Teaching Assistant, PA 034.013: Basic Physics 2	Spring 2025 2024 2023 2023 2022 2021 – 2022 2020 – 2021 2015 2014 2011
TECHNICAL SKILLS	Programming and Software C/C++, Python, Matlab/Octave, Unix/Linux, Tensorflow, Pytorch, ROS, Open Dynamics Engine, IsaacSim Experience with Robots UnitreeRobotics AlienGo/A1/Go1/Go2/B2/G1, ANYbotics ANYmal	
SERVICES	Reviewer T-RO, TIE, RA-L, ICRA, IROS, RSS, CoRL, Humanoids, BioRob, Eurographics	
LANGUAGES	▪ Korean: Native language. ▪ English: Fluent.	
REFERENCES	▪ Prof. Dr. Stelian Coros Associate Professor, ETH Zürich scoros@inf.ethz.ch ▪ Prof. Dr. Marco Hutter Professor, ETH Zürich / Senior Director, RAI Institute mahutter@ethz.ch ▪ Prof. Dr. Dongjun Lee Professor, Seoul National University djlee@snu.ac.kr	