

Dongho Kang

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RESEARCH INTERESTS

My research aims to create legged robots that exhibit natural and animal-like behaviors. Thus, my research interests are broad ranging to legged locomotion control, character animation, and design optimization for robotics applications.

EDUCATION

ETH Zürich, Zurich, Switzerland

- Doctoral Student in Computer Science Apr 2020 – Present
 - Main advisor: Prof. Dr. Stelian Coros
 - Second advisor: Prof. Dr. Marco Hutter

- M.Sc. ETH in Mechanical Engineering Sep 2016 – Aug 2019
 - Advisor: Prof. Dr. Marco Hutter
 - Graduated with distinction

Seoul National University, Seoul, South Korea

- B.Sc. in Mechanical Engineering and B.Sc. in Computer Science Mar 2009 – Aug 2016
 - Advisor: Prof. Dr. Dongjun Lee
 - Graduated with honor (Cum Laude)

RESEARCH EXPERIENCE

Computational Robotics Lab, ETH Zürich

- Scientific Assistant Dec 2019 – Present
 - Supervisor: Prof. Dr. Stelian Coros
 - Control methods for animal-like motions of bio-inspired quadrupedal robots.

Robotic Systems Lab, ETH Zürich

- Master's Student Sep 2017 – Nov 2019
 - Supervisors: David Höller, Dr. Jemin Hwangbo and Prof. Dr. Marco Hutter
 - Learning-based collision avoidance for a legged robot.
 - Participated in the development of RaiSim: a physics engine for robotics and AI research.

Interactive & Networked Robotics Lab, Seoul National University

- Undergraduate Research Assistant Sep 2014 – Jan 2016
 - Supervisors: Prof. Dr. Dongjun Lee
 - State estimation and control strategies for multi-robot cooperative systems

PROFESSIONAL AFFILIATIONS & ACTIVITIES

NVIDIA, Zurich, Switzerland

- Deep Learning Intern Jun 2018 – Dec 2018
 - Projects: Deep learning-based super-resolution and anti-aliasing.

LeisureQ Inc., Seoul, South Korea

- Software Engineer Intern Jan 2016 – Sep 2016
 - Projects: Backend web application for E-commerce website Gajago.

CNP Technology Inc., Seoul, South Korea

- Hardware and CAD Engineer Jan 2016 – Sep 2016

PUBLICATIONS

CONFERENCES

- [1] [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)*, Oct 2022.
- [2] [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)*, Sep 2021.
- [3] 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)*, Sep 2021.

- [4] 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*, Goyang, South Korea, Oct 2015.

WORKSHOP

- [1] Dongho Kang, Flavio De Vincenti, and Stelian Coros, “Nonlinear Model Predictive Control for Quadrapedal Locomotion Using Second-Order Sensitivity Analysis,” in *ICRA 2022: 6th Full-Day Workshop on Legged Robots*, May 2022.

THESIS

- [1] Dongho Kang, “End-to-End Collision Avoidance from Depth Input with Memory-based Deep RL,” Master’s thesis, the Department of Mechanical and Process Engineering, ETH Zürich, Aug 2019.

INVITED TALK	▪ Robot Intelligence Lab, Korea University, Seoul, South Korea	Apr 2021
	▪ NAVER LABS Corp., Seoul, South Korea	Dec 2019
	▪ Max Planck ETH Center for Learning Systems Symposium, Tübingen, Germany	Feb 2019

AWARDS & SCHOLARSHIPS	▪ Birkigt Scholarship, ETH Zürich Stipendiary scholarship for international master student.	Feb 2018
	▪ Eminence Scholarship, Seoul National University Full-tuition scholarship for one academic semester for outstanding academic performance.	Aug 2014
	▪ Development Fund Scholarship, Seoul National University Full-tuition scholarship for one academic year for outstanding academic performance.	Feb 2010

TEACHING EXPERIENCE	ETH Zürich , Zurich, Switzerland	
	▪ Teaching Assistant, Digital Humans (S. Coros, Siyu Tang)	Spring 2023
	▪ Teaching Assistant, Linear Algebra (Ö. Imamoglu, O. Sorkine-Hornung)	Autumn 2022
	▪ Teaching Assistant, Computational Models of Motion (S. Coros, B. Thomaszewski)	2021 – 2022
	▪ Teaching Assistant, Visual Computing (S. Coros, M. Pollefeys)	2020 – 2022
	Seoul National University , Seoul, South Korea	
	▪ Mentor, SNU Samsung Convergence Software Course Program	2015
	▪ Teaching Assistant, MAE 446.204A: Dynamics	2014
	▪ Teaching Assistant, PA 034.013: Basic Physics 2	Autumn 2011

LANGUAGES	▪ Korean: Native language.
	▪ English: Fluent.

TECHNICAL SKILLS	Programming and Software C/C++, C#, Python, Matlab/Octave, Unix/Linux, Tensorflow, Pytorch, ROS, Open Dynamics Engine, Unity
	Experience with Robots UnitreeRobotics Aliengo, A1, Go1, ANYbotics ANYmal

REFERENCES	▪ Prof. Dr. Stelian Coros Associate Professor in the Department of Computer Science ETH Zürich Stampfenbachstrasse 48 (Sumatrastrasse 11), 8092, Zurich, Switzerland scoros@inf.ethz.ch • +41 44 632 02 15
	▪ Prof. Dr. Marco Hutter Associate Professor in the Department of Mechanical and Process Engineering ETH Zürich Leonhardstrasse 21, 8092 Zurich, Switzerland mahutter@ethz.ch • +41 44 632 74 17

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