Dong Ho Kang **dokkev.github.io**

CONTACTS

E-Mail: dongho.robot@gmail.com
Cell Phone: (314)-934-6288
Portfolio: dokkev.github.io
Github: dokkev

EDUCATION

University of Texas at Austin, Austin, TX, USA
PhD in Mechanical Engineering, Currently Enrolled

Northwestern University, Evanston, IL, USA
Master of Science in Robotics, December 2021

Saint Louis University, St.Louis, MO, USA
Bachelor of Science in Mechanical Engineering, May 2020

RESEARCH

Design and Control of Proprioceptive Robotic Hand for Versatile Dynamic Manipulation

The University of Texas at Austin | 08/2023 - current

- Dissipative & reflected inertia **dynamics modeling** in constrained kinematic systems' **bi-directional torque transmission** to control forward-drive force and estimate external back-drive force
- **Control & task optimized design** of dexterous hand with quasi-direct drive actuators for versatile manipulation over wide ranges of items and tools
- **Whole body control** integration to **teleoperate** dynamic manipulation tasks via **shared force cotnrol**

dokkev.github.io/projects/platov2/

Sim2Real Whole Body Manipulation via Learning Dynamics Model

The University of Texas at Austin | 10/2022 - Current

- Learning **adaptive dynamics model** which can be fine-tuned in the real world to close **sim2real** gap in contact rich manipulation tasks
- **Model predictive control** to optimize whole body pushing tasks and adapt through physical interaction
- **T**ask-oriented latent dynamics model via online **reinforcement learning**

WORK

Research Assistant

UT Austin & Sony Group Corporation | Austin, TX & Toyko, Japan | 08/2023 - 08/2024

- **Design optimization** and **prototyping** of a **linkage driven hand** for workspace and tool grasping and hardware duplication support at Sony, Japan
- DRACO3 lower body **cable-driven rolling contact joint** mechanism improvement
- DRACO3 **whole body control framework development**: implementation of modular C++ and Python-based software architecture for control and planning

Research Assistant

HQ Tech | Daejeon, South Korea | 05/2017 - 08/2017

- Vison-based quadcopter **UAV control** for the reservoir flow measurement

PUBLICATIONS

Dong Ho Kang, Aaron Kim, and Luis Sentis, "Design of Multi-fingered Proprioceptive Hand with Fingernails for Versatile Manipulation," Under Review, 2025

SH. Bang, C. Gonzalez, G. Moore, **DH. Kang**, M. Seo, and L. Sentis, "RPC: A Modular Framework for Robot Planning, Control, and Deployment," IEEE International Symposium on System Integration (SII) 2025 (To appear)

Gonzalez, C, Lee, S, Montano, F, Ortega, S, **Kang, DH**, Jaiswal, M, Jiao, J, & Sentis, L. "Design of a Person-Carrying Robot for Contact Compliant Navigation." Proceedings of the ASME 2023 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference.

Technical Skills

Programming & Software: C, C++, Python, MATLAB/Simulink, Linux, Git

Libraries: Pinocchio, Crocoddyl, OMPL, Moveit, OpenAI Gym

Simulation: Drake, MuJoCo, Gazebo, PyBullet

Embedded System: FreeRTOS, ArduinoIDE, STM32CubeIDE, CAN, EtherCAT

CAD/FEA: Creo, Abaqus, Ansys, Solidworks, EAGLE

Robot Hardware Experience: Apptronik DRACO3, Roboligent Optimo, Franka Emika Research 3 (Panda), Boston Dynamics Spot, Rethink Robotics Baxter & Sawyer, HDT Adroit A24, CLEARPATH Robotics Jackal

Teaching Experience

Mechatronics Lab (ME 140L) TA
Unviersity of Texas at Austin | 08/2022 - 12/2022

Mechanical Engineering Lab (MENG 3001) TA
Saint Louis University | 01/2020 - 05/2020

Academic Tutor
Firm Foundation Tutoring Program | 09/2016 - 03/2020

- Worked on course syllabi, study guides, assessments, and other additional documents that assist students in the grades of 4 to 9 for their academic success
- Taught Physical Science, and Algebra, Writing composition (grammar), Reading literature

Honors and Awards

Grand Challenges Scholar, National Academy of Engineering, 2020

Parks College Innovation Challenge 1st Place, Saint Louis University, 2018

Dean's List, Saint Louis University, 2018

Relevant Coursework

Robotic Manipulation	Embedded Systems in Robotics
Sensing, Navigation, and ML	Design and Control of Humanoid
Advanced Mechatronics	Sensory Acquisition
Brain, Body, and Robotics	Haptics and Teleoperated Sytstems

Language Skills

English: Native

Korean: Native