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| CONTACTS | <p><i>E-Mail:</i> dongho@utexas.edu <i>Portfolio:</i> dokkev.github.io</p> | <p><i>Cell Phone:</i> (314)-934-6288 <i>Github:</i> dokkev</p> |
| EDUCATION | <p>University of Texas at Austin, Austin, TX, USA PhD in Mechanical Engineering, Currently Enrolled</p> <p>Northwestern University, Evanston, IL, USA Master of Science in Robotics, December 2021</p> <p>Saint Louis University, St.Louis, MO, USA Bachelor of Science in Mechanical Engineering, May 2020</p> | |
| RESEARCH | <p>PLATO Project: Design and Control for Safe and Versatile Telemanipulation <i>The University of Texas at Austin 08/2023 - current</i></p> <ul style="list-style-type: none"> • Trajectory Optimization and IHWBC of 7-DoF SEA controlled robotic arm and 9-DoF hands for whole body manipulation tasks with complex contact handling • Hybrid task and joint space upper body grasping teleoperation via hand exoskeleton with assistive shared control and haptic rendering • Hardware design of real-time controlled 9-DoF robotic hand with CAN and Linux rt-preempt, FreeRTOS <p><i>https://dokkev.github.io/projects/platov2/</i></p> <p>DRACO3 Whole Body Loco-manipulation <i>The University of Texas at Austin 10/2022 - Current</i></p> <ul style="list-style-type: none"> • DRACO3 locomotion experiments with DCM Planner footstep planning with QP-based optimal controller: IHWBC and WBIC • Implementing planning algorithm by combining the LIPM model based convex MPC and latent full-body dynamics model learned from RL for versatile manipulation motion • DRACO3 hardware improvement: ATI FT-sensor integration, EtherCAT based Motor Driver replacement (Synapticon, Copley) <p><i>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)</i></p> <p>Person-Carrying Autonomous Robot for Contact Compliant Navigation <i>The University of Texas at Austin 09/2022 - 09/2023</i></p> <ul style="list-style-type: none"> • Integrated low-level base controller and torque sensor of a tri-wheel omnidirectional robot. • Implemented navigation stack using TEBLocalPlanner, MoveBase, SLAM Toolbox • Sensor fusion of Lidar, RGBD, and IMU with EKF for improved localization <p><i>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.</i></p> | |
| WORK | <p>Research Intern <i>UT Austin & Sony Group Corporation Austin, TX & Toyko, Japan 06/2024 - 08/2024</i></p> <ul style="list-style-type: none"> • design optimization of a linkage driven hand for workspace and control linearity • Replication and hardware improvement of UT PLATO Hand at Sony Tokyo • ros2-control based high bandwidth real-time impedance control over CAN <p>Research Intern <i>HQ Tech Daejeon, South Korea 05/2017 - 08/2017</i></p> <ul style="list-style-type: none"> • Quadcopter UAV control for the reservoir flow measurement • Presented water flow measuring UAV design at R&D Special Zone Technology Exposition at Daejeon Convention Center | |

TECHNICAL SKILLS

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

Control Frameworks: Pinocchio, Crocoddyl, CasADi, OMPL, OCS2, ModernRobotics

Learning Frameworks: Isaac Gym, Isaac Lab, Robosuite, OpenAI Gym

Simulation: Drake, MuJoCo, Gazebo Classic & Ignition, PyBullet, Issac Sim, CoppeliaSim

Embedded System: FreeRTOS, ArduinoIDE, STM32CubeIDE, CAN, EtherCAT, RS485

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
University 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

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| 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 Systems |

LANGUAGE SKILLS

English: Native

Korean: Native