Hyeonbeen Lee

Curriculum Vitae

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Github: https://github.com/hyeonbeenlee
M.S. Candidate in Kyunghee University

RESEARCH INTEREST

- Robot learning
- Autonomous driving
- Robot dynamics and simulation

EDUCATION

Mar. 2022–Present, Yongin, South Korea
Kyunghee University,
Master's Course in Mechanical Engineering,
GPA – 4.15/4.3 (4.38/4.5) (Advisor: Prof. Jin-gyun Kim).

Mar. 2015–Feb. 2022, Yongin, South Korea
Kyunghee University,
B.S. in Mechanical Engineering,
GPA – 3.60/4.3 (3.87/4.5) (Advisor: Prof. Jin-gyun Kim).

PUBLICATIONS

H. Lee, S. Han, H.S. Choi, J.G. Kim. *"cNN-DP: Composite neural network with differential propagation for impulsive nonlinear dynamics"*, revised from *Journal of Computational Physics* (IF=4.645), `http://ssrn.com/abstract=4296911`

S. Han, G.E. Jeong, **H. Lee**, W.S. Choi, J.G. Kim, *"Multi-body dynamics model for spent nuclear fuel transportation system under normal transport test conditions"*, revised from *Nuclear Engineering and Technology* (IF=2.817).

PRESENTATIONS

18^{th} May 2023, Busan, South Korea
H. Lee, S. Han, H.S. Choi, J.G. Kim. *"Composite neural network with differential propagation for modeling nonlinear impulsive dynamics"*, Conference on Dynamics and Control, Korean Society of Mechanical Engineers (Oral Presentation)

23^{rd} Mar. 2023, Jeju, South Korea
H. Lee, S. Han, H.S. Choi, J.G. Kim. *"Meta-modeling of nonlinear impulsive dynamics using composite neural network model with differential propagation"*, Conference on Engineering Reliability, Korean Society of Mechanical Engineers (Oral Presentation)

16^{th} Feb. 2023, Austin, TX, USA
H. Lee, S. Han, H.S. Choi, J.G. Kim. *"Composite neural network framework for modeling impulsive nonlinear dynamic responses"*, IMAC XLI 2023 (Oral Presentation)

4^{th} Dec. 2022, Jeju, South Korea
H. Lee, S. Han, G.E. Jeong, J.G. Kim. *"Development of multibody dynamics trailer model using normal transportation test data and DNN based surrogate model generation"*, Korean Society for Noise and Vibration Engineering (Oral Presentation).

GRANTS

Ongoing

Jan. 2022–Present *Deep-learning based reaction force and torque prediction model development for underwater ground cutting robot using experimental measurements and dynamic simulation data*, Korea Research Institute of Ships and Ocean Engineering (KRISO).

May 2022–Present *Metamodel generation and evolution procedures for flexible multibody dynamics*, FunctionBay Inc.

Completed

Sep. 2021–Oct. 2022 *Development of ground·sea transportation test simulation model using multibody dynamics and DNN-based metamodel*, Korea Atomic Energy Research Institute (KAERI).

SKILLS

- Skillful at Python & Linux
- PyTorch
- RecurDyn(Multibody Dynamics Simulation)
- C++/C#

AWARDS AND HONORS

Spring 2021 **Academic Excellence Scholarship (Full Tuition)**,
Dept. of Mechanical Engineering, Kyunghee University.

CONFERENCES

May 2023 Conference on Dynamics and Control
Busan, South Korea Korean Society of Mechanical Engineers (KSME)

Mar. 2023 Conference on Engineering Reliability
Jeju, South Korea Korean Society of Mechanical Engineers (KSME)

Feb. 2023 IMAC-XLI
Austin, TX, USA Society for Experimental Mechanics (SEM)

Nov. 2022 Fall Academic Conference
Jeju, South Korea Korean Society for Noise and Vibration Engineering (KSNVE)

Aug. 2022 AI Summer School 2022
Seoul, South Korea Korean Society of Mechanical Engineers (KSME)

Apr. 2022 Conference on Dynamics and Control
Suwon, South Korea Korean Society of Mechanical Engineers (KSME)

Mar. 2022 Conference on Engineering Reliability
Jeju, South Korea Korean Society of Mechanical Engineers (KSME)

Aug. 2021 AI Summer School 2021
Online Korean Society of Mechanical Engineers (KSME)

Apr. 2021 *"AI, Data Driven Models & Machine Learning: How Will Advanced Technologies Shape Future Simulation Processes?"*
Online National Agency Finite Element Methods and Standard (NAFEMS)

MISCELLANEOUS

May 2023 **New TEPS**,
513/600.

2022–Present **Department Office Assistant**,
Dept. of Mechanical Engineering, Kyunghee University.

2022 **Teaching Assistant (Multibody Dynamics)**,
Dept. of Mechanical Engineering, Kyunghee University.

2021–2022 **Undergraduate Research Assistant**,
Modeling and Simulation Lab, Kyunghee University (Advisor: Jin-gyun Kim).
Research Topic: Acceleration of dynamic simulation process using deep learning based approach

2021–2022 **Bachelor's Thesis Project Leader**,
Aerodynamic Design Exploration & Big Data Analysis Lab, Kyunghee University (Advisor: Prof. Shin-kyu Jeong).
Research Topic: Data-driven aerodynamic coefficient prediction using Deep Neural Network and PARSEC airfoil parameterization

2017–2019 **Republic of Korea Marine Corps**,
Pohang, South Korea Honorably Discharged as a Sergeant at 1^{st} Marine Division.