Hyeonbeen Lee

Mobile: +82-10-6236-4693
EMail: david.hyeonbeen.lee@gmail.com
GitHub: github.com/hyeonbeenlee
LinkedIn: linkedin.com/in/hyeonbeen-lee-239500286
Google Scholar: scholar.google.com/citations?user=TiduRxoAAAAJ

PERSONAL INFORMATION

Name:	Hyeonbeen Lee	**Date of birth:**	July 4th, 1996
Nationality:	Republic of Korea (South)	**Address:**	6-3, Hoenamu-ro 39gil, Seoul, South Korea
Military service:	Honorably discharged, Marine Corps Sergeant (May 2017∼Feb 2019)	**Research interest:**	Robot learning, Reinforcement learning, Sequential decision

EDUCATION

Banpo High School, Science-Specialized Track — Mar 2012 — Feb 2015
Kyung Hee University, Dept. of Mechanical Engineering — Mar 2015 — Feb 2022
Bachelor of Engineering (Supervisor: Shin-kyu Jeong, Jin-gyun Kim) — GPA(Major): 3.84/4.5, GPA: 3.87/4.5
Thesis: *'Data-driven aerodynamic coefficient prediction using deep neural network and PARSEC airfoil parameterization'*

Kyung Hee University, Dept. of Mechanical Engineering — Mar 2022 — Feb 2024
Master of Engineering (Supervisor: Jin-gyun Kim) — GPA: 4.33/4.5
Thesis: *'Composite neural network with differential propagation for modeling impulsive nonlinear dynamic systems'*

SKILLS

- **Programming:** Python, Docker, Linux, Git, LaTeX, MATLAB, C#, C++, ROS
- **ML and data analysis:** PyTorch, TensorBoard, Pandas, OpenCV, Torchvision
  - *Expertised at handling sequential data and models*
- **English:** Speaks in native level
- **Japanese:** Speaks in intermediate level

PUBLICATIONS

1. 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", *Nuclear Engineering and Technology (Q1, JCR-IF Top 3.5% in Nuclear Science & Technology)*, 55(11), 4125-4133.
2. **H. Lee**, S. Han, H.S. Choi, J.G. Kim (2023). "cNN-DP: Composite neural network with differential propagation for impulsive nonlinear dynamics", *Journal of Computational Physics (Q1, JCR-IF Top 4.5% in Physics, Mathematical)*, 112578.
3. **H. Lee**, J. Han, T. Yeo, J.G. Kim. "Stochastic Fourier Transformer for interpretable real-time real-world robot force forecasting", in preparation.

CONFERENCES

Dec 4 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", Fall conference, Korean Society for Noise and Vibration Engineering (Oral Presentation).

Feb 16 2023 Austin, Texas, USA	**H. Lee,** S. Han, H.S. Choi, J.G. Kim. "Composite neural network framework for modeling impulsive nonlinear dynamic responses", 41th International Modal Analysis Conference (IMAC) (Oral Presentation).
Mar 23 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 Dynamics and Control, Korean Society of Mechanical Engineers (Oral Presentation).
May 18 2023 Busan, 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).
Nov 1 2023 Incheon, South Korea	**H. Lee**, J. Han, T. Yeo, J.G. Kim. "Real-time multi-horizon reaction force forecasting of ocean robot using interpretable Transformer", Annual Conference, Korean Society of Mechanical Engineers (Oral Presentation).
Jun 9 2024 Madison, Wisconsin, USA	J. Han, J.B. Han, S.S. Kim, M.H. Kim, Y.H. Kim, **H. Lee**, J.G. Kim, T.K. Yeu. "Digital twin model of underwater construction robot for real-time grinding simulation", 7th International Conference on Multibody System Dynamics.

PROJECTS

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).
Sep 2021 — Present	Metamodel generation and evolution procedures for flexible multibody dynamics, FunctionBay Inc.
Nov 2021 — Present	cNN-DP: Composite neural network with differential propagation for impulsive nonlinear dynamics, Modeling & Simulation Lab. (github.com/hyeonbeenlee/cNN-DP)
Mar 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). (github.com/hyeonbeenlee/TimeSeriesSeq2Seq)
Dec 2022 — Jun 2023	RecurDyn Automation using Python, Modeling & Simulation Lab. (github.com/hyeonbeenlee/RecurDynPython)
Mar 2023 — Jun 2023	Segment Anyone: Fine-tuned Segment-Anything-Model (SAM) for human-collaborative robots, Kyung Hee University Dept. of Artifical Intelligence. (github.com/hyeonbeenlee/segment-anything-fine-tuning)

AWARDS AND CERTIFICATES

- **TOEIC:** 925/990 — No.605083, Expired, Nov 25 2018
- **New TEPS:** 513/600 — No.0111736, Valid, May 13 2023
- **OPI English:** AH (Advanced High) — 2A7617334333, Valid, Nov 14 2023
- **Excellence Scholarship (Full tuition)** — Kyung Hee University, Mar 01 2021
- **Exellence Paper Award** — Korean Society of Mechanical Engineers, No.2023-083, Aug 25 2023

MISCELLANEOUS

ROK-US Combined Marine Corps Interpreter — 1st Marine Div., ROKMC, Sep 2017 — Feb 2019
48th Student Council — Kyung Hee University College of Engineering, Feb 2019 — Jan 2020
Undergraduate Research Internship — Modeling & Simulation Lab, Jan 2021 — Feb 2022
Seminar: AI, Data Driven Models&ML — National Agency Finite Element Methods and Standard, Apr 2021
Seminar: AI Summer School 2021 — Korean Society of Mechanical Engineers, Aug 2021
Teaching Assistant (System Dynamics) — Modeling & Simulation Lab, Mar 2022 - Jun 2023
Seminar: AI Summer School 2022 — Korean Society of Mechanical Engineers, Aug 2022

Representative Administrative Assistant Kyung Hee University, Sep 2022 — Present
Seminar: IAS18 Workshop&Tutorials Intl. Conference on Intelligent Autonomous Systems, Jul 2023