Han Byeol Lee

Simulation Engineer

Han Byeol Lee
123, Cheomdangwagi-ro, Buk-gu
Gwangju, 61005, Rep.of Korea

+82) 10-7670-9170
hanb96570@gmail.com

Education

Gwangju Institute of Science and Technology (GIST)
School of Mechanical Engineering (M.S.)
Mar 2022 – PRESENT, Gwangju, South Korea

Smart Diagnosis and Design Optimization Lab

(Advisor: Prof. Hyunseok Oh)

Research on Design under Uncertainty

University of Ulsan, Mechanical Engineering (B.S.)
Mar 2015 – Feb 2022. Ulsan, South Korea

Major in Mechanical Engineering

Minor in IT Convergence

GPA in 4.21/4.5 (Rank: 11/194)

Research Interests

Physics-informed neural network, Simulation, Prognostics and Health Management, Deep Learning

Research Experience

Smart Diagnosis and Design Optimization Lab @GIST
Mar 2022 - PRESENT, Gwangju, South Korea

Graduate Research Assistant (Advisor: Prof. Hyunseok Oh)

Researching Physics-informed neural network

- Conduct and analyze wave simulations.
- Designed deep learning model for wave simulations.

Ulsan Industrial Artificial Intelligence Lab @University of Ulsan
Dec 2020 - Aug 2021, Ulsan, South Korea

Undergraduate Research Assistant (Advisor: Prof. Jongmyon Kim)

Researched Fault Diagnosis using Vibration Signal Data and Machine Learning Algorithm

Applied Fluid Dynamics Research Lab @University of Ulsan
Jul 2020 - Dec 2020, Ulsan, South Korea

Undergraduate Research Assistant (Advisor: Prof. Sangwook Lee)

Researched Artificial Intelligence Model for predicting Cardiovascular Disease

Awards & Honors

2021 Good Idea Casting, University of Ulsan / Excellent Prize
Mar 2021 - Jun 2021

Project on the development of an automatic cold air leak detection system for refrigerator using vibration signal

- Programmed a vibration sensor detector using Arduino

2021 Engineering Lab Internship, University of Ulsan / Silver Prize
Jan 2021

Researched signal processing for rotator failure diagnosis

- Analyzed acoustic signal using a statistical method
- Programmed a program to determine hit detection

Digital Transformation Manpower Training Program, Hyundai Heavy Industries / Excellent Prize
Sep 2020 - Dec 2020

Project on the development of a failure prediction system based on engine data

- Analyzed engine timeseries signal data (Air pressure, Bearing temperature) using a statistical method
- Designed deep learning model for anomaly detection

2020 Engineering Lab Internship, University of Ulsan / Bronze Prize
Jul 2020 - Aug 2020

Research on Artificial Intelligence Model for predicting Cardiovascular Disease

- Compared blood vessel simulation data with real patient blood vessel data
- Designed deep learning model for predicting FFR (Fraction flow reverse)

Skills

Programming C/C#, Python, MATLAB
Framework Pytorch, Tensorflow, Keras, DeepXDE
Tools ANSYS, COMSOL
Languages Korea, English

Extra-curricular activity

2019 Winter Global Challenger to Boston & New York, University of Ulsan, International Exploration Program
2020.01.19 – 02.01

- Team leader
- Responsible for leading a team of 4 undergraduate students