Jihoon Kim

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EDUCATION

Korea Advanced Institute of Science and Technology (KAIST) Mar 2023 – Present

Ph.D. in Mechanical Engineering Daejeon, Korea

- Research: Design for Manufacturing, Design Optimization, Generative Design
- Advisor: Prof. Namwoo Kang, Smart Design Lab
- Teaching Assistant: ME203 Mechatronics System Design, ME231 Mechanics of Materials, HSS190 Freshman Seminar

University of Bath Sep 2020 – Aug 2022

M.Sc. in Data Science United Kingdom

- Thesis: Fine-scale Synthetic Shape Generation with Upsampling Network
- Advisor: Dr. Wenbin Li

University of Bristol Sep 2017 – Jun 2020

B.Eng. in Mechanical Engineering United Kingdom

- Thesis: Testing the Limits of Generative Design for Road Bicycle Frames

EXPERIENCE

Narnia Labs Jan 2025 – Present

AI Researcher Seoul, Korea

- Developed **generative AI** solutions for automotive clients: **NVH optimization**, **CFD-based** air duct generation, and car hood design optimization using **deep learning**
- Leading project as **Project Manager** for **European automotive OEM**: prototyping, model training, and client presentations
- Leading frontend/UI design and software architecture as **domain expert**
- Leading **Global Expansion Team**: client outreach, technology demonstrations, and contract negotiations
- Member of HR team (Pit Crew): company culture and organizational decisions

KAIST Smart Design Lab Sep 2022 – Feb 2023

Research Intern Daejeon, Korea

- Conducted preliminary research on **deep generative models** for engineering design optimization

SLB (previously Schlumberger) Jun 2021 – Aug 2022

Data Scientist Intern United Kingdom

- Developed **AI models** for drill bit design optimization and recommendation
- Optimized **predictive steering** parameters using data analysis and machine learning
- Created **predictive maintenance** systems for drilling electronics

PUBLICATIONS

* denotes equal contribution

Journal

Deep Generative Model-based Synthesis Framework of Four-bar Linkage Mechanisms with Target Conditions

Lee, S.*, **Kim, J.***, Kang, N.

Journal of Computational Design and Engineering, 11(5), 318–332, 2024

Preprints

Deep Generative Design for Mass Production

Kim, J.*, Kwon, Y.*, Kang, N.

arXiv:2403.12098, 2024

Performance Comparison of Design Optimization and Deep Learning-based Inverse Design

Jwa, M.*, **Kim, J.***, Shin, S., et al.

arXiv preprint, 2023

Conferences

A Study on 3D Topology Optimization Shape Reconstruction with CSG-Based Deep Learning

Park, J., **Kim, J.**, et al.

KSME Annual Conference (Poster), 2025

Deep Generative Design for Manufacturing: Meeting Design Constraints of Casting and Injection Molding

Kim, J., Kwon, Y., Kang, N.

Asian Congress of Structural and Multidisciplinary Optimization (ACSMO), 2024

2D Diffusion Model-based 3D Design Optimization for Mass Production

Kim, J., Kwon, Y., Kang, N.

KSME Annual Conference, 2024

Deep Generative Design for Mass Production

Kim, J., Kwon, Y., Kang, N.

KSME CAE Division Spring Conference, 2024

Deep Generative Model-based Synthesis of Four-bar Linkage Mechanisms Considering Kinematic and Dynamic Conditions

Lee, S.*, **Kim, J.**, Kang, N.

ASME IDETC, 2023

Deep Learning-based Parametric Inverse Design Considering Engineering Performance and Additive Manufacturing

Kim, J., Lee, S., Kang, N.

KSME Annual Conference, 2023

SKILLS

Programming	Python, JavaScript/TypeScript, MATLAB
ML/DL	PyTorch, TensorFlow/Keras, scikit-learn
CAD/Simulation	Autodesk Fusion 360, ANSYS Suite, STAR-CCM+
DevOps	Git, Docker, AWS/GCP/Azure, Linux
Web	React, Vite, REST API
Languages	Korean (Native), English (Fluent), Spanish (Proficient)