

Sangjun Han

한상준

AI Researcher
Data Intelligence Lab
LG AI Research

hjun1008@gmail.com
Google Scholar
GitHub

Tech Blog
SlideShare
SoundCloud

CURRENT FOCUS
EXAONE Forecast
Time-series Foundation Model

RESEARCH
Predict · Explain · Generate

DOMAINS
Industry · Science · Art

EXPERIENCE

2020.12 – Now
LG AI Research
Data Intelligence Lab

2019.04 – 2020.12
LG Sciencepark
CIC of LG Electronics

2018.07 – 2019.04
LG CNS
AI Solution Dev. Team

Education

2016.08 – 2018.08
M.S., Electrical Engineering and Computer Science
Gwangju Institute of Science and Technology (GIST)

2011.02 – 2016.08
B.S., Computer Science and Electrical Engineering
Handong Global University (HGU)

PUBLICATIONS 27

* equal contribution

Tech Reports 3

2026
EXAONE Demand 1.0: A Time Series Foundation Model for Demand Forecasting
Seunghan Lee, **Sangjun Han**, Jun Seo, Junhyeok Kang, Jaehoon Lee, Tae Yoon Lim, Dongwan Kang, Hwanil Choi, Minjae Kim, Sungdong Yoo, Soonyoung Lee, Wonbin Ahn
arXiv:2609.30880

2026
EXAONE Forecast for Finance: An Attention-free Time Series Foundation Model for Financial Time Series
Seunghan Lee, Jaehoon Lee, Jun Seo, Tae Yoon Lim, Dongwan Kang, Hwanil Choi, Minjae Kim, Sungdong Yoo, Junhyeok Kang, **Sangjun Han**, Soonyoung Lee, Wonbin Ahn
arXiv:2609.04239

2026
FinVerse: Financial Time-series Benchmark; Toward A More Realistic Evaluation for Financial Time-series Forecasting
Jaehoon Lee, Jun Seo, Seunghan Lee, Tae Yoon Lim, Dongwan Kang, Hwanil Choi, Minjae Kim, Sungdong Yoo, Junhyeok Kang, **Sangjun Han**, Soonyoung Lee, Wonbin Ahn
arXiv:2608.03259

Journals 2

2025
On Incorporating Prior Knowledge Extracted from Large Language Models into Causal Discovery
Chanhui Lee, Juhyeon Kim, Yongjun Jeong, Yoonseok Yeom, Juhyun Lyu, Jung-Hee Kim, Sangmin Lee, **Sangjun Han**, Hyeokjun Choe, Soyeon Park, Woohyung Lim, Sungbin Lim, Sanghack Lee
IEEE Access

2019 **Super-Resolution for Improving EEG Spatial Resolution using Deep Convolutional Neural Network — Feasibility Study**

Moonyoung Kwon, **Sangjun Han**, Kiwoong Kim, Sung Chan Jun

Sensors

Conferences 7

2026 **Channel-wise Retrieval for Multivariate Time-series Forecasting** ORAL

Junhyeok Kang, Jun Seo, Soyeon Park, **Sangjun Han**, Seohui Bae, Hyeokjun Choe, Soonyoung Lee

IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)

2022 **Symbolic Music Loop Generation with Neural Discrete Representations**

Sangjun Han, Hyeongrae Ihm, Moontae Lee, Woohyung Lim

International Society for Music Information Retrieval Conference (ISMIR)

code ↗ demo ↗

2018 **Feasibility of EEG Super-Resolution using Deep Convolutional Networks** ORAL

Sangjun Han, Moonyoung Kwon, Sunghan Lee, Sung Chan Jun

IEEE International Conference on Systems, Man, and Cybernetics (SMC)

slides ↗

2018 **EEG Hyperscanning for Eight or more Persons — Feasibility Study for Emotion Recognition using Deep Learning Technique**

Sunghan Lee, **Sangjun Han**, Sung Chan Jun

Asia-Pacific Signal and Information Processing Association Annual Summit and Conference (APSIPA ASC)

2017 **Effect of Acoustic Stimulation after Sleep Spindle Activity**

Jinyoung Choi, **Sangjun Han**, Kyungho Won, Sung Chan Jun

Sleep Medicine

2017 **Study on Subject-Specific Parameters in Sleep Spindle Detection Algorithm**

Jinyoung Choi, **Sangjun Han**, Moonyoung Kwon, Hyeon Seo, Sehyeon Jang, Sung Chan Jun

International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)

2017 **EEG Spatial Super-Resolution using Deep Convolutional Linear Networks: a Simulation Study** BEST PAPER

Sangjun Han, Moonyoung Kwon, Sung Chan Jun

Korean Society of Medical & Biological Engineering (KOSOMBE)

Workshops 10

2026 **PALM: Point-in-Time Adaptation for Financial Language Models** ACCEPTED

Seunghan Lee, Jun Seo, Jaehoon Lee, Junhyeok Kang, **Sangjun Han**, Sungdong Yoo, Minjae Kim, Tae Yoon Lim, Dongwan Kang, Hwanil Choi, Soonyoung Lee, Wonbin Ahn

ICAIF Workshop on LLMs and Generative AI for Finance

2026 **Traceable Multi-Agent System for Knowledge-Based Forecasting** BEST PAPER

Junhyeok Kang*, **Sangjun Han***, Hyeokjun Choe*, Soonyoung Lee

KDD Workshop on Enterprise AI Agents: From Prototypes to Production

news ↗

2026 **Quantile Alignment Improves Zero-Shot Time-Series Foundation Models** ACCEPTED

Junhyeok Kang, **Sangjun Han**, Jun Seo, Seunghan Lee, Jaehoon Lee, Dongwan Kang, Minjae Kim, Sungdong Yoo, Tae Yoon Lim, Hwanil Choi, Soonyoung Lee, Wonbin Ahn

NeurIPS Workshop on Foundation Models for Temporal Systems

2026 **Explaining Time Series Forecasting with Horizon-Resolved Attribution** ACCEPTED

Seunghan Lee, Jun Seo, Jaehoon Lee, Junhyeok Kang, **Sangjun Han**, Sungdong Yoo, Minjae Kim, Tae Yoon Lim, Dongwan Kang, Hwanil Choi, Soonyoung Lee, Wonbin Ahn

NeurIPS Workshop on Knowledge Discovery and Trust through Interpretable Foundation Models

2026 **Composite Kernel Decomposition of Gaussian Process for Time-Series Foundation Models** ACCEPTED

Sangjun Han, Hyunoh Yeo, Joanie Hayoun Chung, Junhyeok Kang, Seunghan Lee, Jaehoon Lee, Jun Seo, Tae Yoon Lim, Dongwan Kang, Hwanil Choi, Minjae Kim, Sungdong Yoo, Soonyoung Lee, Wonbin Ahn

NeurIPS Workshop on Foundation Models for Temporal Systems

2024 **On Incorporating Prior Knowledge Extracted from Pre-trained Language Models into Causal Discovery**

Chanhui Lee, Juhyeon Kim, Yongjun Jeong, Yoonseok Yeom, Juhyun Lyu, Jung-Hee Kim, Sangmin Lee, **Sangjun Han**, Hyeokjun Choe, Soyeon Park, Woohyung Lim, Kyunghoon Bae, Sungbin Lim, Sanghack Lee

NeurIPS Workshop on Causality and Large Models

2023 **The Interface for Symbolic Music Loop Generation Conditioned on Musical Metadata**

Sangjun Han, Hyeongrae Ihm, Woohyung Lim

NeurIPS Workshop on Machine Learning for Creativity and Design

code ↗

2023 **Diffusion-based Semantic-discrepant Outlier Generation for Out-of-Distribution Detection**

Suhee Yoon, Sanghyu Yoon, Hankook Lee, **Sangjun Han**, Ye Seul Sim, Kyungeun Lee, Hyeseung Cho, Woohyung Lim

NeurIPS Workshop on Synthetic Data Generation with Generative AI

2022 **Instrument Separation of Symbolic Music by Explicitly Guided Diffusion Model**

Sangjun Han, Hyeongrae Ihm, DaeHan Ahn, Woohyung Lim

NeurIPS Workshop on Machine Learning for Creativity and Design

code ↗ demo ↗

2021 **Composer AI with Tap-to-pitch Generator**

Hyeongrae Ihm, **Sangjun Han**, Woohyung Lim

NeurIPS Workshop on Machine Learning for Creativity and Design

Preprints 5

2026 **XForecast: The KDD 2026 Finance Day Challenge on News-Grounded Financial Forecasting**

Jaehoon Lee, Jun Seo, Seunghan Lee, Tae Yoon Lim, Dongwan Kang, Hwanil Choi, Minjae Kim, Sungdong Yoo, Junhyeok Kang, **Sangjun Han**, Soonyoung Lee, Yongjae Lee, Wonbin Ahn

arXiv:2610.16131

2025 **Adaptive Information Routing for Multimodal Time Series Forecasting**

Jun Seo, Hyeokjun Choe, Seohui Bae, Soyeon Park, Wonbin Ahn, Taeyoon Lim, Junhyeok Kang, **Sangjun Han**, Jaehoon Lee, Dongwan Kang, Minjae Kim, Sungdong Yoo, Soonyoung Lee

arXiv:2512.10229

2024 **Flexible Control in Symbolic Music Generation via Musical Metadata**

Sangjun Han, Jiwon Ham, Chaeeun Lee, Heejin Kim, Soojong Do, Sihyuk Yi, Jun Seo, Seoyoon Kim, Yountae Jung, Woohyung Lim

arXiv:2409.07467

demo ↗

2023 **Systematic Analysis of Music Representations from BERT**

Sangjun Han, Hyeongrae Ihm, Woohyung Lim

arXiv:2306.04628

code ↗

2023 **Can We Utilize Pre-trained Language Models within Causal Discovery Algorithms?**

Chanhui Lee, Juhyeon Kim, Yongjun Jeong, Juhyun Lyu, Junghee Kim, Sangmin Lee, **Sangjun Han**, Hyeokjun Choe, Soyeon Park, Woohyung Lim, Sungbin Lim, Sanghack Lee

arXiv:2311.11212

INDUSTRY R&D 8

2026.01 – Now

EXAONE Forecast: Time-series Foundation Model for Zero-shot Forecasting

LG AI Research

Developing a time-series foundation model for zero-shot forecasting across diverse domains and variates; trained models from 23M to 1B parameters on 2T data points.

news ↗ video ↗ GIFT-Eval leaderboard ↗

2025.04 – Now

Supply-Demand-Inventory Simulator for Commodity Price Forecasting

LG Energy Solution · Aramco

Lithium price forecasting with an expert-grade supply-demand-inventory simulator, paired with an agent for advanced error analysis and calibration — spanning domain-expert collaboration and an agent deployment framework.

video ↗

2023.06 – 2023.12

Continuous Optimization based Causal Discovery for Lithium Price Forecasting

LG Energy Solution

Extracted causal graphs through continuous data-driven optimization that explain changes in lithium prices, helping human experts make better-informed decisions.

figure ↗

2021.02 – 2024.12

Symbolic and Audio Music Generation PROJECT LEAD

LG AI Research

Led a music generation system that helps people discover and express their musical identity, tackling multimodal generation across text, audio, and MIDI.

blog 1 ↗ blog 2 ↗ news ↗ video ↗

2020.01 – 2021.12

Prediction of Lithium-ion Battery Life Cycle and Capacity

LG Energy Solution

Benchmarked tree-based and neural models for discharge-capacity prediction; proposed a neural model that beats baselines via improved regularization, explained with XAI. Explored life-cycle prediction under data scarcity with battery domain knowledge.

video 1 ↗ video 2 ↗ blog ↗

2020.01 – 2020.07

Discovering New Chemical Molecules with Deep Generative Models

LG Chem

Built a web interface for Chemical VAE that generates novel molecules in SMILES form with specific target properties, helping chemists explore candidate structures.

concept ↗

2019.01 – 2019.04

Compressing Deep Learning Models for Vision Inspection

LG Display

Applied efficient architectures, pruning, compiling, TensorRT, and Intel MKL on CPU/GPU, reaching 0.03% model size and 0.11% latency on CPU without loss in inspection quality.

blog ↗

2018.07 – 2019.04

Object Detection based Automatic Payment System for Convenience Stores

GS Retail

Worked end-to-end from data collection and labeling to modeling and deployment; improved the classifier of the object detector for robustness across environments.

video ↗

INSTRUCTION 7

2024

Introduction to AI Projects

Project Mentor · Handong Global University

2020 **Predicting Remaining Useful Life for Display Predictive Maintenance**
Project Mentor · LG Academy, LG Display

2020 **PCA/Autoencoder based Predictive Maintenance for Camera Design Process**
Project Mentor · LG Academy, LG Innotek

2020 **Anomaly Detection by Affinity Propagation based Clustering for Battery Faults**
Project Mentor · LG Academy, LG Chem

2019 **Learning to Design Circuits by Reinforcement Learning (Soft Actor-Critic)**
Project Mentor · LG Academy, LG Display

2016 **Introduction to Database Systems**
Teaching Assistant · Handong Global University

2016 **Introduction to Engineering Design**
Teaching Assistant · Handong Global University

INVITED TALKS 12

2026 **Generalization in AI: From Foundation Models to Autonomous Agents**
Dankook University (DKU)

2026 **Generalization in AI: From Foundation Models to Autonomous Agents**
Korea Institute of Energy Technology (KENTECH)

2025 **AI Music Composer and Time-series Reasoning for the Industrial Applications**
LG Discovery Lab Seoul

2024 **Recent Trends and Industrial Applications in Deep Learning**
Handong Global University (HGU)

2024 **Recent Trends and Industrial Applications in Deep Learning**
Korea Institute of Energy Technology (KENTECH)

2024 **Thoughts on Researching and Developing Artificial Intelligence**
Dongseo University (DSU)

2023 **Time-series Analysis and Forecasting for Energy Systems**
The Korean Society for New and Renewable Energy

2023 **AI Music Composer, Bridging the Gap between Emotion and Technology**
LG Discovery Lab Seoul & Busan

2023 **Linear Models: Anomaly Detection, Forecasting, and Causal Discovery**
Korea Institute of Energy Technology (KENTECH)

2023 **Applied AI Research for Industry (Representation, Forecasting, Generation)**
Kyungpook National University (KNU)

2023 **AI's Impact on Industries: Bridging the Gap between Research and Application**
Dongseo University (DSU)

2022 **Why is Data Important for Business? A Tutorial on Anomaly Detection**
Korea Institute of Energy Technology (KENTECH)