Jongsu **Kim**

AI Research Engineer · Data Scientist

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Professional Experience

LG CNS *Seoul, South Korea*

AI Professional (Principle Researcher) *October 2021 - Present*

- Served as project manager on data centric-based LLM focused on Data Centric-based LLM, reducing training data by 50% and cutting training costs by more than 30%.
- Reducing the false alarms by over 30% through unsupervised anomaly detection in limited sensor data.
- Developing an End-to-End sensor anomaly detection solution. (awaiting pilot deployment)
- Conducting anomaly detection PoC based on AWS CloudWatch Prediction and Autoencoder models.
- Experience in serving anomaly detection models on about 10 AWS services.
- Building and managing HPC infrastructure for research and production environments.

School of Mathematical Computing, Yonsei University *Seoul, South Korea*

Ph.D. Student *September 2011 - August 2021*

- Development and analysis of supervised time series forecasting models for particulate matter using various machine learning/deep learning regression models. (2018-2021)
- Improving the performance of regression models by replacing the loss function based on data distribution analysis and accurately measuring performance through the selection of appropriate metrics.
- Modeling and simulation of finite size particles/droplets in laminar and turbulent flows using numerical analysis techniques. (2011-2018)
- Experience in managing HPC cluster infrastructure with more than 30 nodes.

Skills

Artificial Intelligence	Time Series Forecasting (Prediction), Classification model (Supervised/Unsupervised), Generative AI (Large Language Model)
Deep Learning Frameworks	PyTorch, Tensorflow, Scikit-Learn
Mathematics	Statistics, Numerical Analysis, Partial Differential Equation
MLOps	MLFlow, Docker(Docker compose), Time series database(VictoriaMetrics), Data Monitoring(Grafana)
Software Engineering	High Performance Computing, Distributed learning in a MultiGPU environment, Full Stack Web Development(FastAPI/Svelte), Cloud Computing (AWS, GCP)
Fluid Mechanics	Computational Fluid Dynamics, Turbulence Modeling, Immersed Boundary Method

Education

Yonsei University Seoul, South Korea

Ph.D. in Computational Science and Engineering-Mechanical/Electrical Engineering

September 2011 - August 2021

Yonsei University Seoul, South Korea

BSc in Atomspheric Science and BSE in Computer Science

March 2007 - August 2011

Publications

Deep Particulate Matter Forecasting Model Using Correntropy-Induced Loss

Jongsu Kim and Changhoon Lee

Journal of Mechanical Science and Technology, 35.9 (2021): 4045-4063

https://doi.org/10.1007/s12206-021-0817-4

Path instability of a spheroidal bubble in isotropic turbulence

Gihun Shim, Jongsu Kim, and Changhoon Lee

Physical Review Fluids, 6.7 (2021): 073603

https://doi.org/10.1103/PhysRevFluids.6.073603