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OBJECTIVE

Practical-level research and development based on artificial intelligence technology.

(Research Interests: *Anomaly Detection, Representation Learning, and Artificial Intelligence*)

EDUCATION	YEAR
Master's degree in Engineering. (Advisor: Prof. Sangkyun Lee) - Korea University, Anam	2023.08
Bachelor's degree in Computer Engineering. (Advisor: Prof. Sangkyun Lee) - Hanyang University, ERICA	2020.02
PAPERS	YEAR
<ul style="list-style-type: none">Anomaly Candidate Extraction and Detection for automatic quality inspection of metal casting products using high-resolution images, <i>Journal of Manufacturing Systems (SCIE, IF 12.1)</i>	2023
<ul style="list-style-type: none">Abnormal Data Augmentation Method Using Perturbation Based on Hypersphere for Semi-Supervised Anomaly Detection, <i>Journal of The Korea Institute of Information Security and Cryptology (KCI)</i>	2022
<ul style="list-style-type: none">Anomaly Detection in Multi-Host Environment Based on Federated Hypersphere Classifier, <i>Electronics (SCIE, IF 2.9)</i>	2022
<ul style="list-style-type: none">Adversarial Attacks to Neural Networks on Manufacturing Product Image Data, <i>Conference on Information Security and Cryptography (Best paper excellence award)</i>	2020
PATENTS	YEAR
<ul style="list-style-type: none">Electronic apparatus and anomaly detection method thereof (Application No. 10-2022-0087490)	2022
<ul style="list-style-type: none">Method of detecting defect of manufactured product based on high-resolution image using autoencoder and convolutional neural network (Application No. 10-2021-0170176)	2021
<ul style="list-style-type: none">Method of extracting optimal defect candidate based on pixel intensity of difference image between original image and reconstructed image (Application No. 10-2021-0170178)	2021
<ul style="list-style-type: none">Method of improving false detection of image-based defect detection reflecting statistical property of manufactured product inspection area (Application No. 10-2021-0170177)	2021
PROJECTS	PERIOD
Vision inspection for automatic quality control with Myunghwa Industry - Research, development, and deployment	2020.01 ~ 2023.01
<ul style="list-style-type: none">Research and application of defect detection methods for the automatic quality control of metal casting products.With 98.9 % accuracy, a better performance than human inspectors was derived.	

Abnormal behavior detection with Agency for Defense Development (ADD)	2021.06 ~
- Research and development	2022.06

- Research and implementation of anomaly detection techniques for detecting malicious behaviors based on system log data in a multi-host environment.

Air quality forecasting with National Institute of Environmental Research (NIER)	2020.09 ~
- Development and deployment	2023.07

- Implementation and deployment of artificial intelligence technology for predicting fine dust.

Intelligent software testing with Defense Agency for Technology and Quality (DTaQ)	2022.09 ~
- Research and development	2023.08

- Research and implementation of software analysis and testing, to reduce False Positive Rate (FPR).

TEACHING FELLOW	YEAR
Samsung DS Expert - Teaching Assistant	Spring, 2022
Database (202R) - Teaching Assistant	Spring, 2021
Security System Development (211R) - Teaching Assistant	Autumn, 2020
Research in Data Science 2 (CYD730) - Teaching Assistant	Autumn, 2020