BYEONGGIL JUNG

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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

EDUCATION	YEAR
Master's degree in Engineering. (Advisor: Prof. Sangkyun Lee) - *Korea University, Anam*	2023.08 **(expected)**
Bachelor's degree in Computer Engineering. (Advisor: Prof. Sangkyun Lee) - *Hanyang University, ERICA*	2020.02

PAPERS

PAPERS	YEAR
• Anomaly Candidate Extraction and Detection for automatic quality inspection of metal casting products using high-resolution images, *Journal of Manufacturing Systems* ***(SCIE, IF 9.498)***	2023
• Abnormal Data Augmentation Method Using Perturbation Based on Hypersphere for Semi-Supervised Anomaly Detection, *Journal of The Korea Institute of Information Security and Cryptology* ***(KCI)***	2022
• Anomaly Detection in Multi-Host Environment Based on Federated Hypersphere Classifier, *Electronics* ***(SCIE, IF 2.690)***	2022
• Adversarial Attacks to Neural Networks on Manufacturing Product Image Data, *Conference on Information Security and Cryptography* ***(Best paper excellence award)***	2020

PATENTS

PATENTS	YEAR
• Electronic apparatus and anomaly detection method thereof (Application No. 10-2022-0087490)	2022
• Method of detecting defect of manufactured product based on high-resolution image using autoencoder and convolutional neural network (Application No. 10-2021-0170176)	2021
• 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
• 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

PROJECTS	YEAR
Vision inspection for automatic quality control *with Myunghwa Industry* - *Research, development, and deployment*	2020.01.01 ~ 2022.12.31

- 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)* 2021.06.15 ~
- Research and development 2022.06.30

- 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)* 2020.09.22 ~
- Development and deployment

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

Intelligent software testing *with Defense Agency for Technology and Quality (DTaQ)* 2022.09.04 ~
- Research and development

- 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