

YEONGTAK OH

Department of Mechanical Engineering

Email: oyt9306@gmail.com

PERSONAL INFORMATION

Birth: Republic of Korea

Dec 19th 1996

Nationality : Korean

Language : First Language Korean, Fluent in English

Military Service Status : Discharged

Homepage: (Click here)

EDUCATION

Seoul National University

Sep 2022 - Current

Department of Electrical and Electronics Engineering

Ph.D student

Advisor : Prof. Sungroh Yoon

Seoul National University

Sep 2018 - Aug 2020

Master of Mechanical Engineering

Advisor : Prof. Byeng D.Youn

Thesis : Motion-Adaptive Few-Shot Fault Detection Method of Industrial Robot Gearboxes via Residual Convolutional Neural Network

Seoul National University

Mar 2014 - Aug 2018

Bachelor of Mechanical and Aerospace Engineering

Advisor : Prof. Byeng D.Youn

Thesis : Wave Localization and Energy Harvesting Using a Defect Mode of Elastic Metamaterials in Low Frequency Range

Chungnam Science High School

Mar 2012 - Feb 2014

RESEARCH EXPERIENCE

Industrial AI) Deep learning, Signal Processing, Big-data Analysis

Deep Learning : Domain Adaptation, Unsupervised Learning, Anomaly Detection, XAI

Signal Processing : Noise Reduction, Signal Smoothing Filtering

Big-data Analysis : Multi-Channel Time Series Data

Applications : Industrial Robot, Planetary Gearbox, Thermal Power Plant Boiler

RESEARCH INTERESTS

Deep learning : Artificial general intelligence, Contrastive learning, Test-time adaptation

Applications : Computer vision, Physics informed neural network

INTERNATIONAL JOURNAL

1. **Y. Oh,** Y. Kim, K. Na, B.D. Youn, A Deep Transferable Motion-Adaptive Fault Detection Method for Industrial Robots Using a Residual Convolutional Neural Network.

ISA Transactions (IF: 5.468, Rank: 11.54), Nov 2021

2. Khalid S, Lim W, Kim H, **Oh Y,** Youn B, Kim H, Bae Y, Intelligent Steam Power Plant Boiler Waterwall Tube Leakage Detection via Machine Learning-Based Optimal Sensor Selection.

Sensors (IF: 3.576, Rank: 21.09), Nov 2020

DOMESTIC JOURNAL

1. B. D. Youn, H. Kim, J. Ko, J. Park, H. Kong, **Y. Oh**, Domain knowledge-based data preprocessing technology for industrial applications of deep learning, *The Korean Society of Mechanical Engineers(KSME)*, Vol.59(8), p.34-38

INTERNATIONAL CONFERENCE

1. **Y. Oh**, J. Kim, System Design and Implementation of Multi-legged Spider Robots for Landmine Detection in the Demilitarized Zone, *18th International Conference on Ubiquitous Robots(UR)*, 2021, **oral**
2. **Y. Oh**, Y. Kim, K. Na, B. D. Youn, A Novel Fault Detection Method of Industrial Robots Using Motor Current Signals via Convolutional Neural Network (CNN), Jeju, Republic of Korea, *International Conference of Materials and Reliability(ICMR)*, 2019, **oral**, *Best Paper Award*

DOMESTIC CONFERENCE

1. **Y. Oh**, C. Han, IDFAS: Informative Dual-Feature Aggregation Scheme for Continual Learning, Seoul, *The 5th Joint Conference of Korean Artificial Intelligence Association(JKAIA)*, 2021, **poster**
2. **Y. Oh**, Y. Kim. K. Na, B. D. Youn, Deep-Learning based Fault Detection Method of Industrial Robot Gearboxes, Seoul, *Korea Robotics Society Annual Conference(KRoC)*, 2021, **poster**
3. **Y. Oh**, K. Na, H. Kim, B. D. Youn, Unsupervised Learning-Based Thermal Power Plant Boiler Tube Leakage Detection Method, Daejeon, *Intelligent Digital Power Plant Conference*, 2019, **oral**
4. **Y. Oh**, Y. Kim. K. Na, B. D. Youn, Convolutional Neural Network(CNN) based Boiler Tube Leakage Detection in a Power Plant, *Korea Society for Prognostics and Health Management(KSPHM)*, Seoul, 2019, **poster**, *Best Poster Award*

EXPERIENCE

- | | |
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| Serving
<i>IEEE Access</i> reviewer | <i>Aug 2022 - Current</i> |
| Research Intern
Seoul National University, Data Science and Artificial Intelligence Lab
Continual Learning
<i>Advisor : Prof. Sungroh Yoon</i> | <i>Jan 2022- Current</i> |
| Military Service
Location: Korea Military Academy, AI R&D Center
Position: Military Science and Technology Researcher, Republic of Korea Army | <i>Aug 2020- Jan 2022</i> |
| Research Intern
Seoul National University, System Risk and Health Management Laboratory
Deep Learning based Machine Fault Diagnosis
<i>Advisor : Prof. Byeng D. Youn</i> | <i>June 2018- Sep 2018</i> |

PROJECTS

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Pilot Project for reconstruction-based analysis for EV vehicle
Self-supervised sensor reduction | <i>March 2022- Current</i> |
| AI based Diagnosis and Prognostics for Thermal Power Plant
Deep learning-based anomaly detection of thermal power plant system | <i>July 2018- Aug 2020</i> |

AWARDS AND HONORS

Best Poster Awards: KSPHM, Domestic Conference *2019 Fall*
Best Paper Awards: ICMR, International Conference *2019 Fall*
1st Winner in Course Work: Melody Extraction with Pitch Detection via CNN-LSTM *2019 Fall*
Best Project Awards: Advanced Composite Material based on Seashell Structures *2017 Fall*
Gold-medal: Provincial competition for Physics *2013 Fall*

PATENTS

1. **Y. Oh**, inventor, applicant with KEPCO, Boiler Pipe Monitoring System and Method
Republic of Korea - Application No.10-2019-0141165.

TEACHING ASSISTANT

Solid Mechanics, for Undergraduates at Seoul National University *2020 Spring*

SKILLS

Programming Languages Python(Pytorch, Tensorflow), MATLAB
Languages English

SCHOLARSHIPS

Seoul National University Alumni Association Scholarship *2017 Fall - Aug 2020*