YEONGTAK OH

Department of Mechanical Engineering
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PERSONAL INFORMATION

Birth: Republic of Korea	*Dec 19th 1996*
Nationality : Korean	
Language : First Language Korean, Fluent in English	
Military Service Status : Discharged	

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 : Generative AI, 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 Choi*, Y Kim, M Park, C Shin, S Yoon, ControlDreamer: Blending Geometry and Style in Text-to-3D , BMVC, 2024, **poster**
2. **Y Oh***, J Lee*, J Choi, D Jung, U Hwang, S Yoon, Efficient Diffusion-Driven Corruption Editor for Test-Time Adaptation, ECCV, 2024, **poster**
3. **Y Oh**, J Kim, System Design and Implementation of Multi-legged Spider Robots for Landmine Detection in the Demilitarized Zone, UR, 2021, **oral**
4. **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, IMCR, 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

Research Intern *Jan 2022- Aug 2022*
Seoul National University, Data Science and Artificial Intelligence Lab
Continual Learning
Advisor : Prof. Sungroh Yoon

Military Service *Aug 2020- Jan 2022*
Location: Korea Military Academy, AI R&D Center
Position: Military Science and Technology Researcher, Republic of Korea Army

Research Intern *June 2018- Sep 2018*
Seoul National University, System Risk and Health Management Laboratory
Deep Learning based Machine Fault Diagnosis
Advisor : Prof. Byeng D. Youn

PROJECTS

Study on AI-Based Calibration Technology for Simultaneous Optimization of Front/Rear Motor and Battery 6th Harmonic Noise
Time-series Regression *Mar 2024 - Current*

Pilot Project for reconstruction-based analysis for EV vehicle
Self-supervised sensor reduction *Mar 2022 - Sep 2023*

AI based Diagnosis and Prognostics for Thermal Power Plant *Jul 2018 - Aug 2020*
Deep learning-based anomaly detection of thermal power plant system

AWARDS AND HONORS

Best Poster Awards: KSPHM, Domestic Conference *2019 Fall*
Best Paper Awards: ICMR, International Conference *2019 Fall*
Best Project Awards: Advanced Composite Material based on Seashell Structures *2017 Fall*

TEACHING ASSISTANT

Machine Learning Fundamentals and Applications, Seoul National University *2024 Spring*

Solid Mechanics, 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*