

Wonkeun Jo

PH.D. CANDIDATE OF THE CHUNGNAM NATIONAL UNIVERSITY

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Experience

National R&D project

트윈-디지털 스레드 기반 공작기계 지능화 및 공정 최적화 기술 개발

2023 +

Korean Ministry of Trade, Industry and
Energy

박사과정생 연구장려금 지원 사업

2022 - 2023

No. 2022R1A6A3A13056750

Korean Ministry of Education

Industrial

2020 - 2022

- 공구 상태 분류 모델 및 가공조건/장비 변화 적응형 학습방법론 개발
- 딥러닝 기반 절삭력 유사도 지표 및 공구 수명 예측 방법론 개발
- 가공공정 데이터 기반 변화 및 외부 데이터 적응형 머신러닝 학습 방법론 개발
- 공정 데이터 기반 가공 조건 민감도 분석

Korea Institute of Industrial Technology

Astronomy

2020

- 태양 이벤트 탐지 및 분류 방법 개발

Korea Astronomy

Health-Care

2019 - 2020

- 심박 데이터를 기반으로 한 혈압예측 인공지능 설계를 통한 기업지원

Korea Testing Laboratory

Teaching

Deep learning, Daejeon Information & Culture Industry Promotion Agency

May - Jun, 2023

Advanced machine learning & Deep learning, Samsung Electronics' semiconductor division

Aug, 2019

Basic machine learning, Samsung Electronics' semiconductor division

Jul, 2019

Basic machine learning, Samsung Electronics' SWAT trcak

Jun, 2019

Awards

The 1st place of the HeLP Challenge 2023

Oct - Nov, 2023

ASAN MEDICAL CENTER, MINISTRY OF HEALTH AND WELFARE, AND MINISTRY OF SCIENCE AND ICT

Asan Medical Center & Naver cloud

The 3rd place of The AI Graduate Challenge with KT Mi:dm

Jul - Aug, 2023

MINISTER OF SCIENCE AND ICT, ARTIFICIAL INTELLIGENCE GRADUATE SCHOOL COUNCIL, AND KT

AI factory

Dean's Award of the Graduate School

Aug, 2022

CNU

Journals

Neural additive time-series models: explainable deep learning for multivariate time-series prediction

EXPERT SYSTEMS WITH APPLICATIONS, VOL 228 (SCIE, IF=8.665, Q1, TOP 10%)

Oct. 2023

Wonkeun Jo, and Dongil Kim

Strong Rashba parameter of two-dimensional electron gas at CaZrO₃/SrTiO₃ heterointerface

SCIENTIFIC REPORT 13, (SCIE, IF=4.6, Q2)

Sep. 2023

Duhyuk Kwon, Yongsu Kwak, Doopyo

Lee, **Wonkeun Jo**, Byeong-Gwan Cho,

Tae-Yeong Koo, Jonghyun Song

Deep learning-based cutting force prediction for machining process using monitoring data

PATTERN ANALYSIS AND APPLICATIONS, (SCIE, IF=3.9, Q2)

Mar. 2023

Soomin Lee, **Wonkeun Jo**, Hyein Kim,

Jeongin Koo, Dongil Kim

OBGAN: minority oversampling near borderline with generative adversarial networks

EXPERT SYSTEMS WITH APPLICATIONS, VOL 197, 1 (SCIE, IF=8.665, Q1, TOP 10%)

Jul. 2022

Wonkeun Jo, and Dongil Kim

Solar Event Detection Using Deep-Learning-Based Object Detection Methods

SOLAR PHYSICS, VOL. 296, 160 (SCIE, IF=2.961, Q2)

2021

Ji-Hye Baek, Sujin Kim, Seonghwan Choi,

Jongyeob Park, Jihun Kim, **Wonkeun Jo**,

and Dongil Kim

International conferences

Transformer-based unsupervised anomaly detection with multivariate time series

INFORMS ANNUAL MEETING 2023

Oct. 2023

Soomin Lee, Juheon Kwak, **Wonkeun Jo**,

Sungsu Lim, and Dongil Kim

Diffusion model-based oversampling for class imbalanced problems

INFORMS ANNUAL MEETING 2023

Oct. 2023

Geonhee Jang, **Wonkeun Jo**, Sungsu

Lim, and Dongil Kim

Clustering morphological properties of cells using neural network-based image segmentation models

INFORMS ANNUAL MEETING 2023

Oct. 2023

Hyemin Lim, Geonhee Jang, **Wonkeun**

Jo, Yeong Jun Koh, and Dongil Kim

Cutting Force Similarity Calculation in Milling Process Using Siamese LSTM Structure

THE 2ND INTERNATIONAL CONFERENCE ON MECHATRONICS AND ELECTRICAL ENGINEERING

Feb. 2023

Juheon Kwak, **Wonkeun Jo**, Soomin Lee,

Hyein Kim, Jeongin Koo, Dongil Kim

The explainable neural networks for nowcasting

INFORMS ANNUAL MEETING 2022

Oct. 2022

Wonkeun Jo, and Dongil Kim

Prediction of tool wear based on machine learning for cutting force

INFORMS ANNUAL MEETING 2022

Oct. 2022

Hoguen Koo, Soomin Lee, **Wonkeun Jo**,

Hyein Kim, Jeongin Koo, Juheon Kwak,

and Dongil Kim

Machine learning-based sleep quality prediction with body signal data

INFORMS ANNUAL MEETING 2022

Oct. 2022

Hyojeong Kang, Juheon Kwak,

Wonkeun Jo, and Dongil Kim

Cutting force similarity calculation in milling process using siamese LSTM structure

Feb. 2022

THE 11TH INTERNATIONAL CONFERENCE ON INDUSTRIAL TECHNOLOGY AND MANAGEMENT (ICITM)

Juheon Kwak, **Wonkeun Jo**, Soomin Lee,
Hyein Kim, Jeongin Koo, and Dongil Kim

Blood pressure prediction based on deep learning with PPG and ECG signal data

Oct. 2021

INFORMS ANNUAL MEETING 2021

Junwon Park, **Wonkeun Jo**, Hogeun
Koo, Hyungtaik Oh, Kyhyup Oh, and
Dongil Kim

Deep learning-based cutting force prediction with machining process monitoring data

Oct. 2021

INFORMS ANNUAL MEETING 2021

Soomin Lee, **Wonkeun Jo**, Dongil Kim,
Hyein Kim, and Jeongin Koo

Improvement of class imbalanced classification performance with generative adversarial network

Nov. 2020

INFORMS ANNUAL MEETING 2020

Wonkuen Jo, Dongil Kim

Domestic conferences

Detecting estrus in Korean native cattle using the Swin Transformer model

Dec. 2023

KOREA SOFTWARE CONGRESS 2023 (KSC2023)

Hyeongseok Lee, Jeongmin Ha,
Wonkeun Jo, and Youngkuk Kim

GAN 및 Diffusion Model 기반 Oversampling을 통한 클래스 불균형 개선

Nov. 2023

KOREA DATA MINING SOCIETY CONFERENCE 2023 (KDMS2023)

Geonhee Jang, **Wonkeun Jo**, Sungsu
Lim, and Dongil Kim

Diffusion model-based oversampling for class imbalanced problems

Jun. 2023

KOREA COMPUTER CONFERENCE 2023 (KCC2023)

Geonhee Jang, **Wonkeun Jo**, Sungsu
Lim, and Dongil Kim

Adversarial attacks of regression model based on deep learning using multivariate time series

Jun. 2023

KOREA DATA MINING SOCIETY CONFERENCE 2023 (KDMS2023)

Juheon Kwak, **Wonkeun Jo**, Soomin Lee,
and Dongil Kim

신경망 이미지 분할 모델을 이용한 세포의 형태학적 특성 군집화

Apr. 2023

KOREAN INSTITUTE OF INTELLIGENT SYSTEMS (KIIS2023)

Hyemin Lim, **Wonkeun Jo**, Youngjoon
Kho, and Dongil Kim

Machine learning-based prediction of user state on the computer tasking

Feb. 2023

KOREA CONFERENCE ON SOFTWARE ENGINEERING

Hyojeong Kang, Soomin Lee, **Wonkeun Jo**,
and Dongil Kim

특징 추출과 딥러닝을 활용한 항원 결정기 예측

Nov. 2022

KOREAN DATABASE CONFERENCE 2022

Jungmin Ha, **Wonkeun Jo**, and
Young-Kuk Kim

Both authors equally contributed.

Neural additive models for nowcasting

Nov. 2022

KOREA DATA MINING SOCIETY CONFERENCE 2022

Wonkeun Jo, and Dongil Kim

Sleep Quality Prediction with E4 Wireless Dataset based on Machine Learning

Aug. 2022

KOREA COMPUTER CONGRESS 2022 (KCC2022)

Hyojeong Kang, Juheon Kwak,
Wonkeun Jo, and Dongil Kim

Interpretable Neural Network for Time Series Nowcasting

KOREA COMPUTER CONGRESS 2022 (KCC2022)

Aug. 2022

Wonkeun Jo, and Dongil Kim

Recommendation System Based on Graph Collaborative Filtering Using Explicit Information

KOREA SOFTWARE CONGRESS 2021 (KSC2021)

Dec. 2021

Hyungtaik Oh, **Wonkeun Jo**, and Dongil Kim

Hybrid Sequential Recommendation System Using k-NN and Graph Neural Networks

KOREA SOFTWARE CONGRESS 2021 (KSC2021)

Dec. 2021

Hogeun Koo, Soomin Lee, **Wonkeun Jo**, and Dongil Kim

Milling tool wear prediction based on sensor and time-series feature extraction

KOREA SOFTWARE CONGRESS 2021 (KSC2021)

Dec. 2021

Wonkeun Jo, Hogeun Koo, Hyein Kim, Jeongin Koo, and Dongil Kim

Methodology of Cutting Force Similarity Calculation in Milling Process using Siamese LSTM Structure

KOREA SOFTWARE CONGRESS 2021 (KSC2021)

Dec. 2021

Juheon Kwak, **Wonkeun Jo**, Soomin Lee, Hyein Kim, Jeongin Koo, and Dongil Kim

Deep learning-based cutting force prediction with machining process monitoring data

KOREA COMPUTER CONGRESS 2021 (KCC2021)

Jun. 2021

Soomin Lee, **Wonkeun Jo**, Hyein Kim, Jeongin Koo, and Dongil Kim

Blood pressure prediction based on deep learning with PPG and ECG

KOREA COMPUTER CONGRESS 2021 (KCC2021)

Jun. 2021

Junwon Park, **Wonkeun Jo**, Kyhyup Oh, and Dongil Kim

Machine learning-based elderly depression prediction with pattern-of-life data

KOREA SOFTWARE CONGRESS 2020 (KSC2020)

Dec. 2020

Soomin Lee, Seonyoung Kim, **Wonkuen Jo**, Junyoung Choi, Hyungshin Kim, and Dongil Kim

Intelligent data generation with generative adversarial nets for class-imbalanced problems

KOREA COMPUTER CONGRESS 2020 (KCC2020)

Jul. 2020

Wonkuen Jo, and Dongil Kim

Education

Chungnam National University

PH.D. IN COMPUTER SCIENCE & ENGINEERING

Adviser: Dong-il Kim (EHWA) & Sung-su Lim (CNU)

Mar. 2021 +

Daejeon, S.Korea

Chungnam National University

M.S. IN COMPUTER SCIENCE & ENGINEERING

Adviser: Dong-il Kim

Mar. 2019 - Feb. 2021

Daejeon, S.Korea

Chungnam National University

B.S. IN PHYSICS

Mar. 2011 - Aug. 2018

Daejeon, S.Korea