

Jongseok Kim

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Homepage: <https://kor-jskim.github.io>

Google Scholar :  Scholar Profile

Education

M.S. in Computer Science, Chungbuk National University, Korea Mar 2023 – Feb 2025
Thesis : Learning Framework for Enhancing Complex-Valued Sequence Data Processing via Multi-Shape Augmentation

B.S. in Computer Science, Chungbuk National University, Korea Mar 2017 – Feb 2023

Research Interests

Complex-valued signal processing, Data augmentation, Lightweight deep learning, XAI, IoT systems

Publications

* Corresponding Author † Co-first Authors

Submitted Manuscripts

2. (Title withheld due to double-blind review policy.)
Jongseok Kim[†], Byunghyuk Youn[†], Ohyun Jo^{*}
To be submitted to **IEEE Transactions on Industrial Informatics**.
IF : 11.7, Top 1.5%
1. Hybrid Feature Selection for Assessment of Oceanic Channel via Explainable AI
Jongseok Kim, Ho-Shin Cho, Ohyun Jo^{*}
submitted to **Journal of ocean engineering and science**, Under Review
IF : 13.0, Top 2.0%

International Conference and Journal Papers

6. ComplexRep: Integrating Learned Representations to Enhance Complex-valued Data Transparency
Jongseok Kim, Woonggyu Min, Juyeop Kim, Ohyun Jo^{*}
IEEE Internet of Things Journal 2025, (SCIE)
IF : 8.2, Top 3.2%
5. Analysis on Underwater Channel by Using Shapley Additive Explanations
Jongseok Kim, Ho-Shin Cho, Ohyun Jo^{*}
J-KICS 2023, (SCOPUS)
4. Denoising Method for Wireless Communication Signals Based on Convolutional AutoEncoder
Woonggyu Min, Jongseok Kim, Ohyun Jo^{*}
ICAIIC 2025, (International Conference on Artificial Intelligence in Information and Communication)

3. MuShAug: Boosting Sequence Signal Classification via Multishape Augmentation
Jongseok Kim, Ohyun Jo*
IEEE Internet of Things Journal **2024**, (SCIE)
IF : 10.6, Top 2%
2. IncepSeqNet: Advancing Signal Classification with Multi-Shape Augmentations (Student Abstract)
Jongseok Kim, Ohyun Jo*
AAAI 2024, (The 38th Annual AAAI Conference on Artificial Intelligence)
h5 index : 212
1. Intelligent Index Classification Method Based on Machine Learning for Detection of Reference Signal in 5G Networks
 Seungwoo Kang[†], Taegyeom Lee[†], Jongseok Kim, A-reum-saem Lee, Juyeop Kim, Ohyun Jo*
IEEE Access **2023**, (SCIE)

Domestic Conference and Journal Papers

7. Performance Improvement for 5G DMRS Index Classification by Using Complex Neural Networks
 Byunghyuk Youn, Jongseok Kim, Ohyun Jo*
APJCRI **2025**
6. Exploitation of Deep Learning for Detecting 5G Preamble Signal
 AReumSaem Lee, Jongseok Kim, Byunghyuk Youn, Ohyun Jo*
APJCRI **2025**
5. Complex-Valued Neural Network for Enhancing 5G DMRS Index Classification
 Byunghyuk Youn, Jongseok Kim, Juyeop Kim, Ohyun Jo*
KICS Winter Conference **2024**
4. Analysis for Optimizing Sequence Data Augmentation based on Phase Transformation
Jongseok Kim, Ohyun Jo*
APJCRI **2024**
3. Lightweight Data Processing Scheme based on Machine Learning for 5G DMRS Index Classification
Jongseok Kim, Seungwoo Kang, Ohyun Jo*
APJCRI **2023**
2. Enhancing Performance for 5G DMRS Signals Classification using Multi-channel based Imagification
Jongseok Kim, Seungwoo Kang, Juyeop Kim, Ohyun Jo*
KICS Summer Conference **2023**
1. 5G DMRS Data Imagification Method for Efficient Deep Learning-based Index Classification
Jongseok Kim, Seungwoo Kang, Taegyeom Lee, Juyeop Kim, Ohyun Jo*
The 3rd Korea Artificial Intelligence Conference **2022**

Patents

Filed Patents

- Method for Augmenting Time Series Signal Data for Deep Learning and Computing Device for Executing the Method

Research Experience

Experience

Researcher, Information Systems Lab, Chungbuk National University Mar 2021 – Present
Topics: Lightweight deep learning, signal augmentation, phase transformation
Advisor: Prof. Ohyun Jo

Projects

Self-supervised Phase-Invariant Model for Complex Signals 2023.03 – 2024.02
Role: Researcher
Institution: ETRI (Electronics and Telecommunications Research Institute)

Awards & Honors

- **Outstanding Graduate Researcher Award**
(Chungbuk National University, 2025)

Teaching Experience

Teaching Assistant, Chungbuk National University, Korea Mar 2023 – Dec 2024
- Operating Systems (Spring 2023)
- Computer Networks (Spring 2024)

Technical Skills

Languages: Python (Proficient), C (Intermediate)
Tools: Keras, TensorFlow, Git

English Proficiency

TOEFL: N/A
GRE: N/A