Jongseok Kim

Email : kjseok@chungbuk.ac.kr — **Phone** : +82-10-3948-5699
Homepage : https://kor-jskim.github.io
Google Scholar : Scholar Profile

Education

M.S. in Computer Science, Chungbuk National University, Korea Mar 2023 – Feb 2025
Outstanding Graduate Researcher Award

B.S. in Computer Science, Chungbuk National University, Korea Mar 2017 – Feb 2023
Milatary Service : Republic of Korea Army (Jul 2018 – Mar 2020)

Research Interests

Self-supervised Learning, Model Compression, Data Augmentation, Explainable AI (XAI), Intelligent Systems, Signal Processing

Work Experience

Research Assistant: Signal processing and Multimodal Learning Mar 2025 – Present
Information Systems Lab, Chungbuk National University, Republic of Korea

Software Developer: Medical imaging software development Mar 2021 – Dec 2021
Planit Co., Ltd., Cheongju, Republic of Korea

Awards & Honors

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

Research Experience

Ultra Light Weight Machine Learning Technique based on 3D-Imagification of Heterogeneous Time Series Data for Convergence Services based on Internet of Intelligent Things Mar 2022 – Present
- Role: Researcher
- Research Grant : National Research Foundation of Korea, Republic of Korea

Development of 5G+ Intelligent Basestation Software Modem Mar 2022 – Present
- Role: Researcher
- Research Grant : Ministry of Science and ICT, Republic of Korea

Integrated Underwater Surveillance Research Center for Future Technology Adaptation Sep 2024 – Present
- Role: Researcher
- Research Grant : Ministry of National Defense, Republic of Korea

Publications

* Corresponding Author † Co-first Authors

Submitted Manuscripts

2. (Title withheld due to double-blind policy.)
   Jongseok Kim†, Byunghyuk Youn†, Ohyun Jo*
   submitted to **IEEE Transactions on Industrial Informatics**, Under Review
   Impact Factor : 9.9, JCR Top 4.9%

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**, Major Revision
   Impact Factor : 11.8, JCR 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), Accepted
   Impact Factor : 8.9, JCR Top 4.1%

5. Analysis on Underwater Channel by Using Shapley Additive Explanations
   Jongseok Kim, Ho-Shin Cho, Ohyun Jo*
   J-KICS 2025, (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)
   Impact Factor : 10.6, JCR Top 2.2%

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 Artificail Intelligence Conference 2022

Patents

Filed Patents

- Method for Augmenting Time Series Signal Data for Deep Learning and Computing Device for Executing the Method (Application Number : KR10-2024-0071748) Filed: May 2024

Teaching Experience

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

References

Prof. Ohyun Jo (ohyunjo@chungbuk.ac.kr), Chungbuk National University
- Master's Thesis Advisor

Prof. Keon Myung Lee (kmlee@cbnu.ac.kr), Chungbuk National University
- Bachelor's Thesis Advisor

Principal Researcher. Dr. Namil Kim (namilk@etri.re.kr), ETRI (Electronics and Telecommunications Research Institute)
- Principal Researcher, Project Advisor