# Jongseok Kim

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**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** : Multimodal Learning and Signal Processing 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

## 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**: 3D Signal Processing Researcher
- **Research Grant** : National Research Foundation of Korea, Republic of Korea

**Development of 5G+ Intelligent Basestation Software Modem** Mar 2022 – Present

- **Role**: Lightweight Deep Learning & Signal Processing Researcher
- **Research Grant** : Ministry of Science and ICT, Republic of Korea

**Integrated Underwater Surveillance Research Center for Future Technology Adaptation** Sep 2024 – Present

- **Role**: Sensor Data Processing & Explainable AI Researcher
- **Research Grant** : Ministry of National Defense, Republic of Korea

## Awards & Honors

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

## 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