

Daeun Jung

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RESEARCH INTERESTS

Federated learning, Interpretable machine learning, Representation learning

- Developing descriptive representation that mitigate imbalances.
- Developing algorithms that adapt to data distribution changes.

EDUCATION

University of Maryland, College Park, MD, USA
Ph.D. Student, Department of Computer Science

Aug. 2022– present

Ewha Womans University, Seoul, South Korea
M.S., Department of Electronic and Electrical Engineering

Mar. 2019–Aug. 2021

- Thesis: Meta Description Transform for Network Data Analytics
 - Advisor: Hyunggon Park
 - Laboratory: Multiagent Communications and Networking Lab (MCNL)

Ewha Womans University, Seoul, South Korea
B.S. in Engineering, Department of Electronics Engineering

Mar. 2014–Feb. 2019

PROJECTS

Development of Distributed/Cooperated 5G+ Network Data Analytics Functions and Control Technology (Full-Time Researcher)

Ewha Womans University, Seoul, South Korea

Apr. 2021–present

- Developing an automatic feature extractor of time-series data using partial data distribution change.
- Analyzing the general data attributes extraction by separating raw data into noise and essential parts.
- Language/tool: Python (PyTorch)

Supervised Agile Machine Learning Techniques for Network Automation based on Network Data Analytic Function (Full-Time Researcher)

Ewha Womans University, Seoul, South Korea

Apr. 2019–Dec. 2021

- Collected data via network application and representation development based on network protocol characteristics.
- Improved the accuracy of anomaly detection classification by applying phenotypes to CIDDS open data.
- Language/tool: Python (PyTorch), ONOS, Wireshark

Language-Conditioning Processing System based on Connectionism Model Machine Learning for Age-Related Language Impairment Prediction (Full-Time Researcher)

Ewha Womans University, Seoul, South Korea

Jul. 2019–Dec. 2020

- Implemented the mathematical modeling of linear regression-based mild-cognitive evaluation tests using a language-conditioned processing system.
- Developed item reduction algorithms for the validity of mild-cognitive evaluation tests by comparing item combinations.
- Language/tool: Python, R

PUBLICATIONS

Daeun Jung, Hyunggon Park, and Jee Eun Sung, **Concurrent Validity and Item Reduction of the Sentence Comprehension Task Using Machine Learning Approaches**, *Frontiers in Psychology*, Oct. 20, 2021. (Submitted)

Daeun Jung, Jungjin Lee and Hyunggon Park, **Feature Expansion of Single Dimensional Time Series Data for Machine Learning Classification**, *International Conference on Ubiquitous and Future Networks (ICUFN)*, Sep. 13, 2021. (Peer-reviewed) [pdf]

Joohong Rhee, **Daeun Jung** and Hyunggon Park, **Impact of Input Data Randomness on Training Performance of Autoencoder**, *The Korean Institute of Communications and Information Sciences (KICS) Summer conference*, Jun. 16, 2021. (Best Paper Awards)

Jungmin Kwon, **Daeun Jung** and Hyunggon Park, **Traffic Data Classification using Machine Learning Algorithms in SDN Networks**, *Conference on ICT Convergence (ICTC)*, Dec. 21, 2020. (Peer-reviewed) [pdf]

Daeun Jung and Hyunggon Park, **An Iterative Algorithm of Key Feature Selection for Multi-class Classification**, *International Conference on Ubiquitous and Future Networks (ICUFN)*, Aug. 22, 2019. (Peer-reviewed) [pdf]

Sunwoo Cho, **Daeun Jung**, Soohwan Lee, Myung-Ki Shin and Hyunggon Park, **Survey on Machine Learning Algorithms for SDN/NFV Automation**, *The Journal of Korea Information and Communications Society*, Jan. 31, 2019.

EXPERIENCE

Visiting Scholar

Carnegie Mellon University, Pittsburgh, PA, USA

Jan. 2020 – Jul. 2020

- Intensive AI Program fully funded by the Korean government (\$43,435)
 - Processed large-scale multimedia data to generate faceswap based on GAN using AWS
 - Developed a general model for a chatbot based on natural language processing.
 - Language/tool: Python(PyTorch), AWS(EC2), JavaScript

Full-Time Research Intern

Ewha Womans University, Seoul, South Korea

Jun. 2018–Feb. 2019

- Multiagent Communications and Networking Lab
 - Advisor: Hyunggon Park
 - Surveyed the SDN/NFV network architecture and machine learning applications for 5G topology.
 - Extracted key genes through dimensional reduction using clinical breast cancer data.
 - Language/tool: Python, MATLAB, R

- Analog Circuits and Systems Lab

Dec. 2017–Feb. 2018

- Advisor: Sungmin Park
- Studied electronic circuits used in Lidar and CMOS amplifier for Gigabit Ethernet.

Teaching Assistant

University of Maryland, MD, USA

2022–2023

- Advanced Data Structures(CMSC 420), Discrete Structures(CMSC 250)
- Conducted discussion session to promote the understanding to implement the algorithm.
- Language/tool: Python, Java

Ewha Womans University, Seoul, South Korea

2019–2020

- Communications Laboratory (35327-01), Embedded System Design and Laboratory (36517-01)
- Conducted after-class lectures to demonstrate the programming assignments' overall algorithms.
- Language/tool: MIPS, C/C++, MATLAB

HONORS & AWARDS

Best Paper Awards | The Korean Institute of Communications and Information Sciences (KICS)

2021

Research Assistant Scholarship | Ewha Womans University

2020

Admissions Scholarship | Ewha Womans University

2019

DEAN'S List | Ewha Womans University

2015, Fall 2017, Spring 2018

National Grant Scholarship | Ewha Womans University

2015–2018

SKILLS

Python(PyTorch); Java, C/C++; MATLAB; R; AWS(EC2); \LaTeX
Korean(Native), English(Advanced)