Daeun Jung

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REASEARCH 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 — Aug. 2022– *present*
Ph.D. Student, Department of Computer Science

Ewha Womans University, Seoul, South Korea — Mar. 2019–Aug. 2021
M.S., Department of Electronic and Electrical Engineering

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

Ewha Womans University, Seoul, South Korea — Mar. 2014–Feb. 2019
B.S. in Engineering, Department of Electronics Engineering

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 Rheey, **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 faseswap 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

- Multiagent Communications and Networking Lab — Jun. 2018–Feb. 2019
  - 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)