

Hyuk Lee

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Github github.com/dlgur1994

WWW dlgur1994.github.io

Education

2014 Mar - 2021 Feb **Handong University, Pohang, Republic of Korea**

B.S. in Computer Science and Engineering
School of Computer Science and Electrical Engineering

2019 Sep - 2019 Dec **Purdue University, West Lafayette, IN**

Department of Computer and Information Technology
Global Education Program sponsored by Korean Government
Project: Comparison of LoRa and APRS for Smart Farm
Audited Wireless Networking, The Internet of Things

Courses

Algorithms Analysis, C Programming Language, Capstone Design, Computer Architecture, Computer Networking, Database System, Data Structures, Discrete mathematics, Introduction to Software Engineering, Java Programming Language, Logic Design, Mobile App Design, Objective Oriented Design Pattern, Operating System, Open Source Software, Programming Language Theory, Software Engineering, Statistics, System Security(*Soongsil*), Wireless Networking(*Purdue*), The Internet of Things(*Purdue*)

Project

Predict Body Fat by Body Data

Developed a regressor using a machine learning model based on physical data that returned predictions when entering physical data

Used Python, Machine Learning, Jupyter, Git, Flask

(<https://github.com/dlgur1994/Predict-Body-Fat-Percentage-by-Body-Data>)

Classify Words of a Person with Articulation Disorder

Developed Multi-Layer Perceptron (MLP) model that classified 9 words of a person with an articulation disorder

Recorded nine words 100 times each (70 words: train data, 30 words: test data)

Each word was split into 39 MFCCs using Librosa

Made a three-layer MLP model

Developed a back-end server using Flask and stored the trained model

Word classification accuracy: 75.56%

Used Python, Google Colab, Flask

(<https://github.com/dlgur1994/Classify-Words-of-a-Person-with-Articulation-Disorder>)

Compare LoRa and APRS for Smart Farm

Compared LoRa and APRS to find out which was more suitable for long-distance communication on Smart Farm
Calculated expecting networking distances by the Friis Transmission formula
Explained the reason for the actual network communication distance shorter than the expected network distance of APRS with the application of Fresnel Zone
Wrote a paper and approved by IEEE International Conference on Omni-layer Intelligent Systems
Used: Arduino, Antennas, Bread board, HX1 chip, LoRa shield, Spectrum analyzer (<https://github.com/dlgur1994/Compare-LoRa-and-APRS-for-Smart-Farm>)

Experience

2021 Mar - 2021 May	CN Solution, Seoul, Republic of Korea Software Engineer (Internship) Planned a database for the online shopping mall Developed login function for the online shopping mall
2020 Sep - 2020 Dec	OneSoftdigm, Pohang, Republic of Korea Machine Learning Developer (Internship) Developed a machine learning model to predict a person's body fat rate and the possibility of metabolic syndrome with simple biometric data Body fat certification model is used to improve the performance of the company's products Metabolic syndrome prediction model will be used in a hospital
2019 Jun - 2019 Aug	Konan Technology, Seoul, Republic of Korea Machine Learning Researcher (Internship) Developed a text cleansing code to extract the necessary information from news articles Preprocessed training data for machine learning training Used K language (Konnan's programming language similar to C and Python)
2019 Mar - 2019 May	Teaching Assistant Introduction to Computer Science and Electrical Engineering Prepared equipments used in the lab sessions for students Helped students during the practice session
2018 Sep - 2018 Oct	Teaching Assistant Practical Project1 Helped students learn about Java, Eclipse, and Git
2016 May - 2018 Feb	Republic of Korean Army, Haman-gun, Republic of Korea Division Commander Driver Drove over 12,000 miles without any accident

Skill

Programming

Python, C++

Git, Linux, Jupyter, LaTex

Language

English: fluent

- TOEFL Best Score 102/120 (Reading:30, Listening:28, Speaking:23, Writing:21)
- TOEIC Speaking Level 7

Korean: native

Publication

2020

H. Lee, W. Jang, H. Yoon, D. Kim, H. Jung, G. Choi, M. Lee, C. Weon, and A. Smith, "Feasibility of Networking Technology for Smart Farm: LoRa vs APRS," 2020 IEEE International Conference on Omni-layer Intelligent Systems (*COINS*), Barcelona, Spain (Virtual), 2020, pp. 129-134.
https://github.com/dlgur1994/AgIoT_LoRa_vs_APRES/blob/master/Papers/LoRa%20vs%20APRS/F easibility%20of%20Networking%20Technology%20for%20Smart%20Farm-%20LoRa%20vs%20A PRS.pdf

2019

J. Jeon, **H. Lee**, and S. Hwang, "An AI Speech Recognition Application for the Articulation Disorder," 2019 Korea Computer Congress (*KCC*), Jeju, Korea, 2019, pp. 1854-1856.
<https://github.com/dlgur1994/Classify-Words-of-a-Person-with-Articulation-Disorder/blob/main/pu blication/조음%20장애인들의%20음성인식을%20위한%20AI%20어플리케이션.pdf>

Certification, Award, and Scholarship

Certification

CCNA (Cisco Certified Network Associate)
Feb, 2021

Award

Handong Capstone Design Competition Encouragement Prize
Spring, 2019
By An AI Speech Recognition Application for the Articulation Disorder

Scholarships

Academic Excellent
Spring & Fall, 2018

Volunteer Experience

**2018 Dec - 2019 Aug
(During Vacations)**

Programming Teacher
Pohang Welfare Center for the Disabled, Pohang, Republic of Korea
Taught disabled people 'app inventors' and 'scratch'
Helped them create simple apps

2018 Aug

Academy of Asian Business Program Staff
Sungkyunkwan University, Seoul, Republic of Korea
AAB is an academic society on Asian business and consumer research
Helped Hong Kong students to present
Gave a city tour to international students

2016 Jan - 2016 Feb Global Entrepreneurship Training Program Staff
Harare Institute of Technology, Harare, Zimbabwe
It is to help the current and future global leaders from developing countries
Helped the professors prepare for the lecture and the students' presentation.