

Miyoung Chung

Department of Biomedical Engineer/UNIST

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Education

Sep. 2020 - Present (Expected Graduation at Aug. 2022)

M.S. Program, Biomedical Engineering

Ulsan National Institute of Science and Engineering (UNIST), Ulsan, Rep. of Korea

GPA 4.3/4.3 (All classes were held in English)

UNIST Scholarship (Graduate) Recipient, Sep.2020-Current

Mar. 2014 - Feb. 2020

B.S. 1st Track: Electrical Engineering

2nd Track: Human Factors Engineering

Ulsan National Institute of Science and Engineering (UNIST), Ulsan, Rep. of Korea

Magna cum laude, GPA 3.65/4.3 (All classes were held in English)

Academic Performance Scholarship Recipient, Mar. 2014 - Dec. 2015

National S&T (Science & Technology) Scholarship Recipient, Mar. 2016 - Feb. 2020

Research Experiences

Research Assistant (Graduate)

Jan. 2020 – Present (Advisor: Prof. Sung-Phil Kim)

BCILAB, Dept. of Biomedical Engineering, UNIST, Ulsan, Rep. of Korea

1. Conducted a data analysis and neural decoding research on musical pitch

imagery data of ECoG and EEG

2. Developed a real-time brain-computer interface (BCI) system of decoding an imagined musical pitch

from EEG

3. Conducted a data analysis and neural decoding research on speech data of ECoG and EEG

4. Developed a system of classifying an imagined Korean word from EEG

AICP (Artificial Intelligence Challengers Program) team member

Sep. 2021 - Present

UNIST Innovative Education Center, Ulsan, Rep. of Korea

1. Conducted a data analysis and classification research on Robot sensor data

2. Conducted a follow-up study for Artificial Intelligence application on predicting CFRP(Carbon Fiber Reinforced Plastic) delamination

Research Assistant (Undergraduate)

June 2018 - Dec. 2019 (Advisor: Prof. Ian Oakley)

Interactions Lab, Dept. of Human Factor Engineering, UNIST, Ulsan, Rep. of Korea

1. Conducted research on smartwatch finger identification
 2. Assisted an eye-movement signal processing filter generation
- Apr. 2019 - Aug. 2019 (Advisor: Prof. Kyung-myun Lee)

Music&Brain Lab, Dept. of Culture and Technology, KAIST, Daejeon, Rep. of Korea

Assisted an experiment and data management on the rhythm and language correlation study

Teaching Experiences

Teaching Assistance, UNIST, Ulsan, Rep. of Korea

Advanced Multivariate Data analysis and Data mining
Sep. 2020 - Dec. 2020

Web Design Instructor, Regent University, Accra, Rep. of Ghana

Member of IT tech instructors, World Friends ICT Ghana
July 2017

Basic Dance Instructor, Ulsan, Rep. of Korea

Dance Instructor of 15 undergraduate & graduate students of UNIST
Sep. 2019 - Dec. 2019

Peer-Reviewed Journal Publications

- [1] T.H. Kim, **M.Y. Chung**, E.J. Jeong, Y.S. Cho, O.S. Kwon, S.P. Kim, "Neural representation of musical pitch in space" (under review)
- [2] **M.Y. Chung**, T.H. Kim, E.J. Jeong, C.K. Chung, J.S. Kim, O.S. Kwon, S.P. Kim, "Decoding imagined musical pitch from human scalp electroencephalograms" (in preparation)
- [3] "Relationship between covert/overt speech and semantic/phonologic feature of Korean words" (in preparation)
- [4] "Predicting delamination of CFRP when the drilling process manipulated with robot arms" (in preparation)

Conference Proceedings

- [1] J.G. Choi, D.C. Kim, **M.Y. Chung**, S.H. Lim, H.W. Park, "A multimodal deep learning model for carbon fiber-reinforced plastic (CFRP) drilling process optimization, 2022 ICS Conference, Florida, USA

Research Interests

Neural Data Science
Music Perception
Neural decoding
Music and Speech Brain-Computer Interface

Skills

Programming: MATLAB (Most fluent), Python, R, C++ (Basic)

MATLAB

MATLAB Toolboxes: EEGLAB, Psychtoolbox

Python

Python Libraries: Scikit learn, Tensorflow, etc.

R

Logic Pro X

C++ (Basic level)

Language

Korean, Native

English, Fluent (attended to Sherwood Elementary School, Maryland,
Mar. 2003 – Feb.2004 (Test Scores: TOEIC 935/990, TOEFL 92/120)