

## 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. 1<sup>st</sup> Track: Electrical Engineering

2<sup>nd</sup> 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

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)