

JIEMING ZHANG

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EDUCATION

Sungkyunkwan University, Republic of Korea

Sep.2023 - Present

- PhD student in Computer Science and Engineering
- Advised by Prof. Tai-Myoung, Chung and Prof. Hogun, Park

Sungkyunkwan University, Republic of Korea

Sep.2021 - Aug.2023

- Master of Computer Science and Engineering
- Advised by Prof. Tai-Myoung, Chung and Prof. Joon-Hee, Choi

University of Wollongong, Australia

Jul.2018 - Aug.2018

- Visiting Student, Electronic and Electrical Laboratory

Zhengzhou University, China

Sep.2017 - Jun.2021

- Bachelor of Engineer, Computer Science and Technology
- Advised by Prof. Ling, Ma

RESEARCH INTEREST

Machine Learning, Computer Vision, Image Processing, Graph Convolution Network,
Healthcare, Medical Information Processing, Neurological Disorders Recognition

RESEARCH IN PROGRESS

Research on AI-based Parkinson Assessment Method Using Multi-modality Data

Sungkyunkwan University, Korea

Sep.2023 – Present

- Objective: To recognition Parkinsonian and evaluate severity using multi-modality data
- Responsible for data collection, data pre-processing, feature extraction, network construction and utilizing the network to recognize Parkinsonian.

Development of Digital Diagnostic Technology for Depression

Sungkyunkwan University, Korea

Apr.2023 – Present

- Objective: To monitor, early warn and detect depression from biological signals
- Responsible for data collection, data pre-processing, feature extraction, network construction and utilizing the network to achieve the objective.

RESEARCH EXPERIENCE

Vision-based Parkinsonian Gait Recognition Using Graph Convolution Network

Sungkyunkwan University, Korea

Oct.2022 – May.2023

- Objective: To recognition Parkinsonian gait directly from colorful videos
- Responsible for video data collection, data pre-processing, skeleton data extraction, spatio-temporal graph construction and utilizing a graph convolution network to recognize Parkinsonian gait.

Development of Brain-Body Interface Technology Using AI-based Multi-sensing

Supported by National IT Promotion Agency of Korea (NIPA), Korea

Sep.2021 – Dec.2022

- Objective: To analysis depression level using brain function information.
- Responsible for processing original data (fMRI, fNIRS) collected from Samsung Medical Center to generate brain functional connectivity matrixes and correlation features. The convolutional neural

network (CNN) was used to construct a machine learning model to determine whether depression exists and predict the degree of depression.

A Data Augmentation Method Using Style-Based GAN for Pulmonary Nodule

Zhengzhou University, China

Jan.2021 - Jun.2021

- Objective: To generate a sample of pulmonary nodules with good authenticity and diversity to address the scarcity and imbalance of labeled data.
- Responsible for constructing a medical image dataset from LIDC-IDRI dataset; using the data to train a generator; segmenting lung parenchyma was by the threshold segmentation method, and OpenCV was used to synthesize the augmented images of pulmonary nodules into the lung parenchyma and output the synthesized position.

Campus Equipment-Repair Reporting System

Zhengzhou University, China

Sep.2020 - Dec.2020

- Objective: Implemented the campus equipment-repair reporting system based on Java Web and MySQL, which mainly served the campus users.
- Responsible for project plan, task assignment, schedule management and system integration. Introduced Google's verification code mechanism into the system to keep its security. In charge of analysis and design of the back-end, including designing database, developing all the Servlets to complete data interaction between front-end and back-end, designing and debugging the JSP pages.

PUBLICATION

Refereed Journal Articles

- [1] **Zhang, J.**, Lim, J., Kim, M. H., Hur, S., & Chung, T. M., “[WM-STGCN: A Novel Spatiotemporal Modeling Method for Parkinsonian Gait Recognition](#)”, *Sensors*, 23(10), 4980, 2023. (**Impact Factor: 3.9**)

Conference Proceedings

- [1] Lee, N., **Zhang, J.**, Lee, Y., Kim, T., Kim, H., & Jeon, H. J., “[Classification of Depression Based on Functional Near-Infrared Spectroscopy \(fNIRS\) Signals Using Machine Learning Algorithms](#)”, in *Human Systems Engineering and Design (IHSED 2023): Future Trends and Applications*, 2023.
- [2] **Zhang, J.**, & Chung, T. M., “[An Improved YOLO V5 Model for Pulmonary Nodule Detection with Synthetic Data Generated by GAN](#)”, in *19th IEEE Conference on Ubiquitous Intelligence & Computing (UIC)*, 2022.

SELECTED HONORS AND AWARDS

Sungkyun Honor Scholarship (STEM \$13400/year), Sungkyunkwan University	2021-2023
Admission Scholarship, Sungkyunkwan University	2021
Best Graduation Thesis Award (2%), Zhengzhou University	2021
Second-Class Academic Scholarship, Zhengzhou University	2021
Third-Class Academic Scholarship, Zhengzhou University	2019-2020
First-Class Certification of China's National Information Security Level	2018

SKILLS INFORMATION

- Programming Languages: Python, JAVA, C/C#, R, Matlab, SQL
- Software Packages: Pytorch, Tensorflow, Keras, Scipy
- English Ability: IELTS: 6.5 (Reading: 7, Listening:7)