JIEMING ZHANG

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EDUCATION

Sungkyunkwan University, South Korea *Sep.2021 - Present*

- 4 semester of Master in Computer Science and Engineering
- Advised by Prof. Tai-Myoung, Chung

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, Medical Image Processing, Action Recognition

PUBLICATION

An Improved YOLO V5 Model for Pulmonary Nodule Detection with Synthetic Data Generated by GAN
Jieming Zhang and Tai-Myoung Chung. The 19th IEEE Conference on Ubiquitous Intelligence & Computing (UIC 2022).

WM-STGCN: A Novel Spatio-temporal Modeling for Parkinsonian Gait Recognition
To be submitted.

RESEARCH IN PROGRESS

Vision-based Parkinsonian Gait Recognition Using Graph Convolution Network
Sungkyunkwan University, Korea *Oct.2022 - Present*

- 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.

RESEARCH EXPERIENCE

Development of Brain-Body interface technology using AI-based multi-sensing
Supported by National IT Promotion Agency of Korea (NIPA) *Sep.2021 – Dec.2022*

- Objective: To analysis depression level using brain function information.
- Responsible for processing original data (DCM) collected from Samsung Medical Center to generate brain functional connectivity matrix. The convolutional neural network (CNN) was used to construct a deep learning model to determine whether depression exists and predict the degree of depression.

International Student Visiting Program
University of Wollongong, Australia *Jul.2018 - Aug.2018*

- Improved practical abilities of oscilloscope operation, analog and digital circuit design, and electronic design automation, etc.

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.

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.

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*

ADDITIONAL INFORMATION

- English ability: IELTS: 6.5(Reading:7, Listening:7)
- Professional ability: (1) Used Python, PyTorch to build convolutional neural network for a specific task; (2) Pre-processed common datasets, such as VOC, COCO and some medical datasets: LIDC-IDRI, LUNA16, BraTS2015 and so on; (3)Used object detection benchmarks, such as Faster RCNN, Mask RCNN, YOLO, and so on. Familiar with graph convolution network and gait recognition.