Park, June-Young

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Notion Page

EDUCATION

Ajou University
Master of Engineering in Convergence Healthcare Medicine *2022.09-2024.08*
- Thesis: - (Advisor: Tae-Joon, Kim)

Sangji University
Bachelor of Engineering in Information and Communication Software Engineering *2017.03-2022.08*
- Thesis: Development of a Skin Cancer Lesion Classification Model through Neural Network Architecture Search. (Advisor: Roy C. Park)

PUBLICATIONS

Conference

Abroad

1. June-Young Park, Jae-Ryung Hong, Min-Hye Kim, Tae-Joon Kim. ”Skip-GANomaly++: Skip-Connections and Residual Blocks for Anomaly Detection(Student Abstract)”. Proceedings of the AAAI Conference on Artificial Intelligence, Vancouver, Canada (Feb. 2024) - Poster
2. June-Young Park, Hye-Rim Shin, Tae-Joon Kim. ”OSA-NET: An Efficient Convolutional Neural Network for OSA Diagnosis Screening Tool”, International Conference on Image Processing Theory, Tools and Applications (IPTA), Paris, France (Oct. 2023) - Oral

Domestic

1. June-Young Park, Hye-Rim Shin, Min-Hye Kim, Tae-Joon Kim, ”Efficient Machine Learning Methods using 2D Photographs for OSA Screening and Diagnosis”, Korean Sleep Research Society, Seoul, Korea (Jul. 2023) - Oral
2. June-Young Park, Tae-Joon Kim, ”Development of temporal lobe regional slowing detection model using electroencephalography and deep neural network”, Korean Epilepsy Society (KEC), Seoul, Korea (Jul. 2023) - Oral
3. J. Y. Park et al., ”Algorithm for fundus vessel detection using Unet”, Korea Computer Congress (KCC), Jeju Island, Korea (Jun. 2022) - Poster
4. J. Y. Park et al., ”Edge Detection Algorithm for Classification of Skin Cancer Lesions”, Korea Computer Congress (KCC), Jeju Island, Korea (Jun. 2022) - Poster
5. J. Y. Park et al., ”Development of CRNN Model for Classification of Skin Cancer Lesions”, Korea Institute of Convergence Signal Processing (KICSP), Seoul, Korea (Jun. 2022) - Poster
6. J. Y. Park , Roy C. Park, ”Development of Mordality Predict Model for patients with Liver Disease using Machine Learning”, Korea Institute of Convergence Signal Processing (KICSP), Seoul, Korea (Nov. 2021) - Poster
7. J. Y. Park and Roy C. Park, ”Development of Skin Cancer Lesion Classification Model using NAS”, Korea Artificial Intelligence Convergence Technology Society (KAICTS), Seoul, Korea (Nov. 2021) - Poster
8. J. Y. Park et al., ”Mortality Prediction of COPD Patients using MultiModal Learning in Hospital”, Rehabilitation Engineering and Assistive Technology Society of Korea (RESKO), Daegu, Korea (Nov. 2021) - Oral
9. J. Y. Park, Y. H. Han, ”Segmentation of Skin Cancer Lesions using ResUNet++”, The Institute of Electronics and Information Engineers (IEIE), Jeju Island, Korea (Jul. 2021) - Oral

Journal

1. June-Young Park, Chang-Min Kim, Chan-Hong Park. ”SCLC-Edge Detection Algorithm for Skin Cancer Classification”. The Journal of Korea Institute of Convergence Signal Processing, 23.4 pp.256-263 (2022) : 256.
2. June-Young Park, Young-Hwan Han. ”Segmentation of Skin Cancer Lesions using ResUNet++”. Journal of the Institute of Electronics and Information Engineers, 59.2 pp.95-100 (2022) : 95.

WORK AND EXTRACURRICULAR EXPERIENCE

- Research Student at AUNAL Lab, Ajou Univ., Laboratory Leader *2022.09-2024.08*
- Team Leader at Medical AI, Deep Daiv, Mentor *2023.07-Present*
  - Summer Season. Medical AI Team Mentor *2023.07-2023.10*
  - Fall Season. Medical AI Team Mentor *2023.10-2024.01*
  - Winter Season. Medical AI Team Mentor *2024.01-2024.04*
- Research Student at UNI Lab, Sangji Univ., Laboratory Leader *2020.11-2022.08*

AWARDS AND HONORS

- Outstanding Academic Award in the Oral Presentation Category at the Academic Conference, Korean Sleep Research Society *Jul, 2023*
- Encouragement Award in the Undergraduate Paper Competition at the Korea Computer Congress (KCC), KIISE *Jul, 2022*
- Excellent Paper Award at the Summer Academic Conference, KICSP *Jun, 2022*
- Completion of the Precision Medicine Clinical Genomics Specialist Training Course, Ministry of Health and Welfare-Korea University Medical Center *Dec, 2021*
- Excellent Paper Award at the Autumn Academic Conference, KICSP *Dec, 2021*
- Excellent Paper Award at the Autumn Academic Conference, KAICTS *Nov, 2021*
- Undergraduate Paper Competition Encouragement Award, RESKO *Nov, 2021*
- Grand Award for Graduation Project, Sangji Univ. *Nov, 2021*

RESEARCH EXPERIENCE

Development and Treatment of a Real-Time Diagnostic Algorithm for Sleep Apnea in Acute Stroke Patients Using Biosignals

Research Student *2022.09-2024.02*

- Experienced in Biosignal Analysis and Deep Learning, Responsible for the Creation and Analysis of the Research Algorithm.

Biomedical Convergence Technology Professional Training Program

Research Student *2022.09-2024.08*

- EEG and Critical Patient Biosignal Analysis, Deep Learning Analysis. (with ASTRON) *2022.09-2023.08*
- Development and Validation of Brain Disease Diagnostic Software (with JLK) *2023.09-2024.08*

Development of a Smart Blood Flow Diagnostic Patch System for Stroke Monitoring

Research Student *2022.08-2022.12*

- Conducting Comparative Analysis and Data Analysis of RWPA Patients.

Development of a Medical Imaging Expansion and Key Feature Focused Learning Network for Bio-Health Twin Services

Research Student *2022.06-2022.08*

Development of an Edge-Health Framework and Self-Learning Algorithm for Knowledge-Based Health Twin Services

Research Student *2021.12-2022.02*

Contextual Deep Learning-Based Emerging Health Risk Mining for Traffic Safety – Urban Traffic Accident Risk Prediction Using Knowledge-Based Data and Deep Learning

Research Student *2020.04-2021.12*

PROJECTS

Main Projects

Skip-GANomaly++: An Advanced Architecture for Anomaly Detection

- Enhanced Skip-GANomaly Model Exhibits Improved Performance on CIFAR-10 Benchmark Dataset
- Paper Accepted as a Student Abstract at AAAI-24

Development of EEG Temporal Slowing Detection Model Using GAN
- Generative Model Development and Validation
- Construction of Data Preprocessing Pipeline

OSA-NET: An Efficient Convolutional Neural Network for OSA Diagnosis Screening Tool
- Development of a Deep Learning Model to Diagnose Sleep Apnea Using 2D Facial Photograph Data
- Development of an Efficiency Block-Based CNN Model

Machine Learning Model to Predict the Risk of Obstructive Sleep Apnea
- Development of a Model Combining OSA-NET and Sleep Questionnaire to Predict Patient's OSA Risk
- Construction of Data Pipeline and Development of Machine Learning Model

Side Projects

LLaVA-EEG: Development of EEG Signal Classification Model Using LLaVA
- ***Project Leader*** for this Project Team
- Development of a Language Model for Classifying Clinical EEG Signals

Development of Chest X-Ray Report Generation Model
- ***Project Leader*** for this Project Team
- Developing the Model Using MIMIC-CXR Dataset and Report Dataset
- Using BLIP Model, Combining Vision Transformer for Image Embedding and BERT for Text Embedding

Prediction of CAD Comorbidities in Diabetic Patients
- ***Project Leader*** for this Project Team
- Development of a Model for Early Prediction of Coronary Artery Disease in Diabetic Patients

Chest X-Ray Disease Classification Through Few-Shot Learning
- ***Project Leader*** for this Project Team
- Few-shot classification with Language Embeddings for chest X-ray Reporting

Development of EEG Temporal Slowing Detection Model Using GAN
- Generative Model Development and Validation
- Construction of Data Preprocessing Pipeline

Development of a Graph Neural Network Using Facial Mesh Point Data
- Development of a Pipeline to Convert 2D Facial Photographs into 3D Mesh Data
- Development of a Point Cloud Graph Neural Network Using Mesh Data Points

Development of Skin Cancer Lesion Edge Detection Algorithm (SCLC)
- Development of a Filter for Detecting the Edges of Skin Cancer.

Development of ECG Signal Anomaly Detection Model Using Generative Adversarial Networks
- Development of a Data Preprocessing Pipeline for Converting ECG Signal Data into Images
- Classification of ECG Arrhythmia Signals Using GAN Algorithms

Skin Cancer Lesion Segmentation Using ResUNet++
- Development of a Skin Cancer Lesion Segmentation Model Using Image Segmentation Algorithms

SKILLS

Engineering
- **AI Framework** - PyTorch, Tensorflow
- **Data Engineering** - SQL, Data ETL

- **Web Client Development** - javascript, react.js, HTML, CSS
- **Infrasructure** - Container based environments, Cloud service providers including AWS and Docker

General

- **Language Skills** - Korean as mother tongue, fluent English and Japanese