PRACHAYA KHOMDUEAN

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Github
github.com/jayprachaya

LinkedIn
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I am a data scientist with a passion for medical research to enhance the quality of healthcare with artificial intelligence. My area of expertise is deep learning, particularly in image processing, including image detection and segmentation. Currently, I'm interested in Vision Transformer (ViT) and Reinforcement Learning (RL). I constantly update the latest developments in the AI field.

PUBLICATIONS

Segmentation of Lung Lobes and Lesions in Chest CT for the Classification of COVID-19 Severity

*This preprint is Under Review at Scientific Reports. DOI: https://doi.org/10.21203/rs.3.rs-2466037/v1

In this study, represent a model for Semantic Segmentation of the lung lobe area and lesions by using 3D-UNet deep learning modeling technology in combination with a pre-trained model, e.g. DenseNet. for COVID-19 severity infection analysis with DSC of 0.93

EDUCATION AND QUALIFICATIONS

Bachelor's Degree of Health Data Science

Aug 2018 - Jun 2022

Princess Srisavangavadhana College of Medicine, Chulabhorn Royal Academy and King Mongkut's University of Technology Thonburi (KMUTT) | GPA of 3.42 (2nd Class Honours)

- This major focusing on the combination of the data science domain and medical knowledge, i.e. anatomy, communicable and non-communicable diseases, and precision medicine.

EXPERIENCE

Data Research management officer

Aug 2022- Present

Chulabhorn Learning and Research Center, Bangkok, Thailand

- Researching techniques and deep learning models for a medical imaging research project.
- Analyze and clean the clinical data to support the research project.
- Process structured and unstructured data such as clinical data, CT-scans
- Create a Power BI dashboard to track the performance of the organization's research publications.
- Supporting the data management unit for ISO/IEC 27001 implementation.

Internship

Jun - Jul 2021

Medical bioinformatics program, Siriraj, Mahidol University

- Developing a computer vision-based image segmentation program to detect dengue virus foci in focus forming assay (FFA) with a specificity rate of 93.75%. Follow this project here: https://github.com/si-medbif/dengue_foci

SKILLS

Hard Skills

- Coding with Python, SQL, HTML, CSS, Basic R
- Experience with Jupyter Notebook/Lab, Colab, Power BI, Power Automate
- Deep learning for image detection and segmentation, Yolov8, Vision Transformer
- NLP: Transformer Language Models, Sentiment analysis, Text analytics, Web scraping

Soft Skills

- Responsibility, Problem-solving, Attention to detail, Creativity, Teamwork
- TOEIC score: 655

PROJECT

Ultra-Wideband Based human activity classification Mar 2023
- Developed a deep learning model for human activity classification using YOLOv8-CLS and Vision Transformer

Financial QA chatbot Mar 2023
- Created an information retrieval question-answering system for financial data

Obstacle Avoidance with Reinforcement Learning for Robotics Feb 2023
- Developed a Q-learning algorithm for obstacle avoidance in robots and created a map for reinforcement learning simulation in Gazebo

Liver lesion detection Feb 2023
- Developed a deep learning model for the detection of liver lesions, utilized YOLOv8

Skin lesion detection Feb 2023
- Utilizing the Cira core to detect and categorize skin lesions as malignant or benign, then integrated with the Line API

Research publications dashboard Oct 2022
- Created a dashboard using Power BI to effectively visualize the performance of the organization and research KPIs

Person Activity Detection Jun - Jul 2022
- Utilized YOLOv5 to detect human activity in a live video stream from a webcam

CSC web app Aug 2021 - May 2022
- Predicting precentage of infection, using semantic segmentation technique and Streamlit for prototype implementation

Dengue foci count system Jun - Jul 2021
- A project aims to count numbers and measure areas of dengue foci from focus forming assay (FFA)

ACTIVITIES

- Participated in Super AI Engineer Season 3: Level 2 (https://superai.aiat.or.th/) Jan - Mar 2023
- Participated in Super AI Engineer Season 3: Level 1 (https://superai.aiat.or.th/) Oct - Dec 2022
- Attendance in the competition AI Hackathon Online #1 “Covid-19 Image” for classification of Chest X-ray 2020
- Volunteered for The Princess Mother's Medical Volunteer Foundation at Phayao University 2020
- Attendance in the Princess Chulabhorn International Oncology Conference (PCIOC 2019) at Centara Grand Hotel & Convention Centre, Bangkok, Thailand 2019
- Representative from Faculty of Medicine and Public Health in a field study at Hospital & Public Health Company in Hangzhou and Shanghai, China 2019

CERTIFICATES

- Super AI Engineer Season 3 Examination Certificated by AIAT [credential] Dec 2022
- Good Clinical Practice: ICH GCP E6(R2) for Investigator and Trial Staff by Chulabhorn Royal Academy [credential] Sep 2022
- Perform Foundational Data, ML, and AI Tasks in Google Cloud [credential] Apr 2022
- BigQuery for Machine Learning [credential] Apr 2022

INTERESTS / HOBBIES

- Reading publications about technology and innovation
- Stock Investment, particularly in tech companies
- Attending technology conferences
- Enjoy exercising regularly, with a focus on weightlifting and calisthenics