

CONTACT

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SKILLS

Python 3+ yrs

C++ 1+ yrs

Matlab 1+ yrs

Machine Learning 3+ yrs

Tensorflow 3+ yrs

ZHANG YIN RUI

Computer Science & Engineering

RESEARCH INTERESTS

During my studies at the University of Malaya, I achieved CGPA of 3.53/4. My research has concentrated on deep networks and their interpretability, with a particular focus on the performance of convolutional networks in medical image detection and enhancing their self-explanatory capabilities.

I am eager to pursue further research in deep neural networks, especially in improving their interpretability and applying these advancements to certain areas. My aim is to contribute to the development of robust, reliable, and transparent AI systems that provide valuable insights and support informed decision-making.

EDUCATION

Master - Computer Science(Applied Computing)
University of Malaya - Kuala Lumpur(Malaysia)

2021 - ongoing

Current Status: Coursework completed with CGPT 3.43/4.0.
Thesis work on Machine Learning and Interpretability.

Bachelor - Automation
Southwest Minzu University - ChengDu (China)

2016 - 2020

Passed with 80.03 Average Score.
Thesis work on Computer Vision and Machine Learning

INTERSHIP & WORK EXPERIENCE

Engineering
China Realway Construction Company

2020 - 2021

I worked as an architecture engineer there.

Engineering
Sichuan Huadi Information Technology Co.,Ltd.

2019

I was an intern there, and my main job was to participate in project hardware and software designing in a robotic project.

PUBLICATIONS

A Go referee system based on MLP neural network and computer vision
Application (patent) number: CN201910676706.2

China Patent

Status: Authorized

REFEREES

Prof. Dr. LOO CHU KIONG
(University of Malaya)
Master's Research Supervisor
✉ ckloo.um@um.edu.my

Dr. SONG PENGYUN
(Southwest Minzu University)
Bachelor's Research Supervisor
✉ songpy23@swun.edu.cn

A system and method for reconstructing glasses through facial key point recognition
Application (patent) number: CN201911001584.3

China Patent

Status: Authorized

PROJECTS

Computer Aided Melanoma Diagnosis Using Interpretable Deep Model
Supervisor: Prof. Dr. LOO Chu Kiong

2023-2024

In this project, I independently designed and developed a self-explanatory deep learning model for melanoma detection. The model features convolutional, pooling, deconvolutional, and unpooling layers, along with a prototype network specifically for interpretability. The key innovation of this model is its ability to provide transparent insights into the decision-making process. By integrating mechanisms for visualizing and understanding the model's internal workings, this project addresses the "black box" problem in machine learning. This interpretability is crucial for enhancing trust and reliability in AI-driven medical diagnostics.

Computer-aided vision detection system based on human posture recognition
Supervisor: Dr. Song Pengyun

2020-2021

This project was proposed by our corporate partners and officially commenced in 2019, involves displaying visual markers on a screen and requiring participants to perform specific actions like jumping and squatting to ensure adequate physical activity. My role was to develop the neural network for human posture recognition. I utilized image processing and deep learning technologies to assess the accuracy of participants' actions and calculate the results of the vision tests.

System And Equipment For Computer-Aided Retinopathy Detection
Supervisor: Dr. Song Pengyun

2019-2020

The machine learning model, trained on retinal images, detects the incidence probability of diabetic retinopathy. Initially trained on Google's public dataset, we later expanded our dataset with images collected using a custom-designed optical device. My role was to develop the machine learning model for diagnosing retinal images. Both the model and the device have proven to be of great assistance during doctors' consultations.

This project was supported by the China University Student Innovation and Entrepreneurship Project Fund

Go Referee System Based On Computer Vision And Machine Learning
Supervisor: Dr. Song Pengyun

2018-2019

This project involved using image technology to identify and reconstruct chess pieces and the board in Go endgame pictures. Initially, piece recognition was inaccurate, but the introduction of machine learning networks resolved this issue. As the team leader, I managed the team, handled data preprocessing, and developed the machine learning model for piece classification. The project, launched in 2019, was integrated into the 'Cloud Snake' platform and later used in major competitions by Chengdu Chess Academy and Gansu Danxia Chess Academy.

This project was supported by the China University Student Innovation and Entrepreneurship Project Fund

HONORS & AWARDS

The 4th China International College Students' "Internet+" Innovation and Entrepreneurship Competition

University Second Prize

The 5th China International College Students' "Internet+" Innovation and Entrepreneurship Competition

University First Prize & Provincial Third Prize

The China International College Students' "Internet+" Innovation and Entrepreneurship Competition has been held annually since 2015. 39.83 million college students comprising 9.43 million teams from five continents, 100 countries, and thousands of universities around the world have participated.

Challenge Cup2019

University First Prize & Provincial First Prize & National Third Prize

'Challenge Cup' National Undergraduate curricular academic science and technology works by race known as the Chinese college students of academic science and technology 'Olympic' event.