ZHAO, Sihang

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EDUCATION

The Chinese University of Hong Kong, Shenzhen — Shenzhen, China
MPhil in Computer and Information Engineering, Supervised by Prof. Pinjia He — Jan. 2023- Present

Imperial College London — London, UK
MSc in Applied Computational Science and Engineering, with *Merit* — Oct. 2021- Oct. 2022

University of California, Davis — Davis, California
Exchange Programme, with Overall GPA 3.92 — Sept. 2020- June 2021

Wuhan University of Technology — Wuhan, China
BEng in Computer Science and Technology , with *Overall GPA 3.83* — Sept. 2017- June 2021

RESEARCH EXPERIENCE

MSc Final Individual Project — Imperial College London
Automated Crater Detection and Classification with Machine Learning — April 2022 - Sept. 2022

- Designed and implemented the *Metamorphic Crater Generator (MCG)*, a generation algorithm for crater-images.
- Proposed a Crater Detection Algorithm test method and a training iteration strategy based on MCG
- Applied MCG as data augmentation method. On YOLO V5, the recall rate increased by 3% and the mAP 0.5 increased by 2% tested on the dataset provided by Benedix et al.
- The model trained under the MCG - augmentation iteration strategy achieved 7% more recall rate on craters of 1.5~ 10 km diam and 6% more recall rate on craters smaller than 1.5 km on the same dataset.

MPhil Researcher — The Chinese University of Hong Kong, Shenzhen
Human - Computer Interaction and Software Design with Large Language Models — Mar. 2023 - Present

- Designed and developed a reading-aid software for Dyslexics
- Evaluated the usability and effectiveness of the software

Research Assistant — The Chinese University of Hong Kong, Shenzhen
Evaluation about the Inability to Reason of ChatGPT — Dec. 2022 - Mar. 2023

- Proposed a hypothesis that ChatGPT does not consider the logical relationships between options, common sense, and questions when processing QA tasks
- Designed a series of multiple-choice QA datasets called Odysseus to validate the above hypothesis
- ChatGPT performed poorly on Odysseus, indicating that it indeed did not use above deep logical relationships to solve problems

INTERNSHIP

SenseTime — Shenzhen, China
AI Software Designer and AI Product Manager — April 2023 - Present

- Designed AI software based on the usage scenarios of smart city and smart transport (i.e. Pavement defect detection)
- Designed object detection and event detection software for Disneyland

Chinasoft International — Ningbo, China
Software Designer and Developer — Jul. 2020- Aug. 2020

- Involved in a project to make the data analysis (over 2000 lines) of Korean players in "League of Legends", a free-to-play multiplayer online battle arena
- Made the requirement analysis and product design, implemented UI via TKinter and SQL.
- Learnt and applied Pytesser for security code recognition, dealing with anti-crawling mechanism of some websites
- Employed Good-Turing Frequency Estimation to smooth the aliasing of the data
- Result: the programme's final prediction and analysis were in line with the actual situation of the current version of the game; won the First Place in the oral defence for the project

AWARDS

Academic Excellent Awards in UC, Davis — June 2021
Third-class Scholarship of Wuhan University of Technology — Nov. 2020
Merit Student of Wuhan University of Technology — Nov. 2020
Excellence Award for 21st East China Cup Mathematical Modelling Competition — May 2019
Second Prize in Chinese High School Mathematics Competition — Sept. 2016

PROGRAMMING SKILLS

C++: Object-oriented programming
Python: Data visualization via **matplotlib, Scientific computing** via **SciPy**
Machine learning via **pytorch** and **sklearn**
Java: Programmed games (e.g., Minesweeper, Maze and Match It)
JavaScript, SQL, C#: Implement courses designs

RESEARCH INTEREST

- **Human-computer interaction**
- **Applied Machine Learning**
- **Software Engineering**