Junhua Liu

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Education

The University of Melbourne, Victoria, Australia *Mar 2023 – July 2024*
Master of Information Technology (Second Class Honors Division A)

The University of Melbourne, Victoria, Australia *Mar 2019 - Dec 2022*
Bachelor of Data Science (Second Class Honors Division A)

Research Experience

Semantic Segmentation on Food Images *Mar 2024 – Jun 2024*
Advisor: Prof. Rize
- Investigated the performance of four models (FCN, Mask R-CNN, DeepLabV3, Segformer) for food image segmentation tasks.
- Evaluating performance across two datasets with varying levels of complexity using mIoU and pixel accuracy metrics.
- Achieved 85.9% accuracy with transfer learning and data augmentation techniques, demonstrating improved model generalization.

Industry Experience

Research Software Engineer Intern **Feb 2024 -Jun 2024**
Medical Research, Melbourne, Australia
- Enhanced a personnel management system by restructuring database schemas to improve consistency and scalability
- Collaborated with end users to refine system usability and interface design

Machine Vision Engineer Intern **Dec 2023 - Jan 2024**
Vision, Nanjing, Jiangsu, China
- Assisted setting up software environment. Toke main responsibility in testing existing robotic arm system's accuracy in three locations
- Adopting novel techniques in the data collecting process, speeding up data collection efficiency

Project Experience

AI Path Finding Challenge *Sep 2023 - Nov 2023*
The University of MEL, Melbourne
- Modelled three agents competing with opponents to archive higher score in Pacman Game Challenge
- Won 31/40 games using best agent implemented using Approximate Q-learning
- Formed group of 3, collaborate on agent design and development with team members frequently, improving performance of individual agents and raise team ranking

Fake Climate News Verification System *May 2023 - Jun 2023*
The University of MEL, Melbourne
- Verified claims through collecting and matching relevant facts from 1.2 million records
- Completed 2 models, retrieved claim using BM25 and NER, executed classification using Bert
- Won half of competitors in claim retrieval task and classification model achieve an accuracy of 0.748

Skills

- Programming Languages: C++ | JAVA | Python
- Skill Sets: TensorFlow | Pytorch | OpenCV | Keras | Sklearn | Pandas | Pyspark
- Development Experience: Docker | Git | Agile Development | Team Collaboration | Vue | Node | Ansible | AWS
- Language: Chinese (Native) | English (fluent)

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