Yifei Yue

yueyifei.xyz +86 180 3222 7696 z5392319@ad.unsw.edu.au

EDUCATION

BSc in Computer Science, University of New South Wales   September 2021 – May 2023
- Cumulative Weighted Average Mark: 85.3 (High Distinction)
- Relevant Modules:
  Database Systems & Implementation; Algorithm and Programming Techniques; Computer Vision; Neural Networks and Deep Learning; Machine Learning and Data Mining; Software Engineering Fundamentals

BSc in Computer Science (Hons), University of Nottingham Ningbo China   September 2018 – June 2020
- Cumulative average before transfer: 71% (First Class)
- The Dean's Scholarship (Top 10%), 2018 – 2019 Academic Year

Exchange, National University of Singapore   January 2023 – May 2023
- Relevant Modules:
  Information Security; Computational Media Literacy; Probability and Statistics; Information Retrieval

WORK EXPERIENCE

Research Assistant, Stanford University   May 2023 – Present
- Responsible for development of web scraping algorithms for collecting and preprocessing data from multiple Chinese news platforms.
- Developed a BERT-based word embedding model to train a detector for analyzing user speech, identifying sentiment, bias, and compliance with regulations or signs of radicalism.

UI and Driver Development Intern, Hikvision Hebei Research & Development Center   May 2023 – Present
- Currently responsible for development and maintenance of various subsystems and device drivers within embedded Linux Kernel.

Research Intern, NVIDIA Joint-Lab on Mixed Reality, NVIDIA Technology Centre   June 2021 – October 2021
- Explored the use of machine learning-based emotion classifiers to facilitate the transfer of emotions and expressions in verbal communication in an AR environment.
- Developed a virtual chatroom to simulate an AR environment and implemented a real-time facial emotion recognition system using mini_XCEPTION model.
- Integrated the emotion recognition system into the chatroom and used emoji to represent users' emotions while protecting user privacy.

Visual development Leader, The robot team of the University of Nottingham   September 2019 – June 2021
- Participated in the largest robotics competition RoboMaster in China sponsored by DJI and served as the leader of the robot vision development team and won the second prize in the 2021 competition.
- Responsible for the visual development (automatic aiming system) of land robots and drones and promoting the development progress of the team.

Data Mining Intern, UNNC-NFTZ Blockchain Laboratory   May 2020 – August 2020
- Responsible for data mining of some major commercial databases, such as Tianyan Check, Wind and Csmar.
- Responsible for preprocessing more than 200,000 enterprise data as part of the data source of a new green financial database.

PROJECTS

Brain MRI Image Segmentation   September 2022 – November 2022
- Implemented a convolutional network for brain MRI image segmentation using TensorFlow, incorporating ideas from UNet, Attention-based UNet, and Deep Residual UNet.
- Trained and evaluated models on an augmented dataset of 4000 images, achieving IoU scores of around 0.99 and Dice coefficients of around 0.7.

Elo Merchant Category Recommendation   May 2022 – August 2022

- Developed machine learning models to predict user loyalty in the ELO merchant category recommendation project, utilizing 1.05 million user transaction records and approximately 330,000 merchant records.
- Implemented data preprocessing techniques including stitching, feature extension, and feature selection using filter and wrapper methods.
- Trained and tuned machine learning models using random forest, LightGBM, and XGBoost, applying cross-validated grid search and TPE hyperparameter optimization for parameter tuning.
- Improved model accuracy and stability by ensemble learning techniques, including voting and averaging.

Real-time Pedestrian Tracking and Behavior Analysis   May 2022 – August 2022

- Developed a real-time video tracking system using DeepSORT and YOLOv5 to accurately detect and track pedestrians, achieving a precision of 88.5% and a recall of 68.5%.
- Implemented algorithms to analyze pedestrian behaviour over time, including counting the number of pedestrians walking in groups and alone, and tracking group formation and destruction.
- Demonstrated the effectiveness of the tracking system through a MOTA score of 49.5%.

Automatic Keyword Detection in Social Media   September 2020 – November 2021

- Crawled all posts containing the keyword "Trump" in January 2020 and some corresponding attributes, such as the number of likes, comments and reposts, for a total of 18,399 posts.
- Proposed a novel approach that combines the distinct attributes of social media with the LDA topic model.
- Achieved higher precision and recall than several baseline models for the task of keyword detection.
- The project was accepted by the 2021 Sigma Xi Student Research Showcase, and a poster presentation was given at the following 2021 Annual Meeting and Student Research Conference.

Constructing a Virtual Human that can Communicate Intelligently with Users   September 2020 – June 2021

- Constructed an intelligent virtual human using Unity3D, including the implementation of facial expressions, body movements, speech synthesis, and lip synchronization.
- Developed a central decision-making system that integrates other virtual human functions, such as facial, speech, hand and body gesture recognition.
- Implemented stable interaction between the virtual human and users, including calling a user by name and initiating conversations, playing the game of rock-paper-scissors, and engaging in basic conversation, resulting in a smooth and seamless experience.

PAPERS

Utilizing Social Media Attributes for Enhanced Keyword Detection: An IDF-LDA Model Applied to Sina Weibo
Yifei Yue   arXiv:2306.07978

VOLUNTEER EXPERIENCE

Peer Mentor, University of Nottingham Ningbo China   September 2019 – June 2020

- Responsible for the electing of class committee, hosting class meetings and other activities, sorting out student profiles and helping students with academic and life issues.

Student Representative, University of Nottingham Ningbo China   November 2018 – May 2019

- Managed class leaders of CS classes, conducted biweekly meetings to gather feedback from computer science students, and reported to staff representatives for course improvement discussions.

International Volunteer, Sri Lanka International Volunteer Project   January 2019 – February 2019

- Responsible for teaching English and campus renovation for kindergartens in a Sri Lanka village for a week.

OTHER INTERESTS

Video game is a key area of interest for me. I founded a team of 7 members and represented the University of Nottingham Ningbo China to participate in the Zhejiang University E-sports League, which had around 20,000 participants. Our team finally won the fourth place in the trials. In addition, I have been actively sharing game tips and strategies with other players through my video game livestreaming channel, which has gained over 10,000 subscribers on Huya Live as of 2022. These experiences not only brought me a lot of joy, but also helped me develop strong communication and leadership skills.