

# Yifei Yue

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## EDUCATION

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### BSc in Computer Science, University of New South Wales September 2021 – December 2022

- Cumulative Weighted Average Mark: 85.3 (High Distinction)
- Relevant Modules:  
Database Systems; Database Systems Implementation; Algorithm and Programming Techniques; Computer Vision; Neural Networks and Deep Learning; Machine Learning and Data Mining; Software Engineering Fundamentals; Higher Mathematics 1A, 1B; Professional Issues and Ethics in Information Technology

### BSc in Computer Science (Hons), University of Nottingham Ningbo China September 2018 – June 2020

- Cumulative average before transfer: 71% (affected by COVID-19 pandemic in Spring 2020)
- First class in Year 1 (79% Average)
- The Dean's Scholarship (Top 10%), 2018 – 2019 Academic Year

### Exchange, National University of Singapore January 2023 – present

- Relevant Modules:  
Introduction to Information Security; Introduction to Operating Systems; Computational Media Literacy; Probability and Statistics; Information Retrieval

## WORK EXPERIENCE

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### 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

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### Full Stack Event Management System September 2022 – November 2022

- Developed a web application using Flask and React, allowing hosts to register, login, and advertise events, and customers to view, book, and review events.
- Utilized a MySQL database to store event and user data and implemented CRUD functionality for events, bookings, user authentication and authorization.
- Implemented search and recommendation functionality using cosine similarity and word embeddings.
- Tested the application across multiple devices and browsers to ensure a seamless user experience.

### 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.

**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**

- Responsible of managing class leaders of all CS classes, hosting meetings with class leaders and collecting feedback from computer science students twice a week.
- Responsible for reporting to staff representatives twice a week about student feedback and discussing these with staff representatives about course improvement.

**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.