

YUSI YUAN

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EDUCATION

National University of Singapore (NUS)

Aug 2023 - May 2027

Bachelor of Computing in Computer Science (with honour)

- GPA: 4.73/5.0 (highest distinction)
- Placed on the Dean's List of School of Computing
- Second major in Mathematics

SKILLS

- Programming skills: R, SQL, Java, Javascript, HTML, CSS, Python, C, C#, C++
- Software: Tableau, Power BI, Unity, Camtasia, Canva, PowerPoint, Excel
- CS focus area: AI & Machine Learning, System & Network

EXPERIENCE

NUS, Research Assistant

May 2025 - Now

- Conduct research under Prof. Chan Mun Choon on optimizing collective communication efficiency in distributed machine learning systems
- Implement multicast and aggregation support in programmable switch to improve node communication efficiency

NUS, Teaching Assistant for the course Data Structure and Algorithm

Jan 2025 - May 2025

- Recap key data structures and algorithm concepts in lab sessions of 20 students to reinforce lecture material
- Guide students through solving algorithmic problems in Kattis, providing step-by-step explanations and personalised feedback on solutions, and conduct weekly quizzes

NUS, Digital Production Assistant for the course Introduction to Business Analytics

Aug 2024 - Dec 2024

- Spearheaded the transformation of course materials into interactive video content by leveraging data visualization techniques in Tableau and video editing in Camtasia
- Collaborated in a group of 3 to conduct an in-depth analysis of student engagement patterns deploying data-driven methodologies, employing statistical analysis and qualitative sentiment evaluation

Peking University, Research Assistant

May 2024 - Aug 2024

- Co-authored a paper accepted at the 3rd IEEE International Conference on Metaverse Computing, Networking and Applications (MetaCom 2025)
- Conducted research on multi-person tracking in 360° Metaverse videos, combining face recognition and pose estimation
- Designed a two-stage tracking pipeline with adaptive thresholds and dynamic tracking states

PROJECTS

Machine Learning: Maritime Deficiency Severity Prediction

Jan 2025

- Introduced a consensus severity scoring system using weighted majority voting
- Addressed class imbalance using SMOTE and random under-sampling, enhancing model generalization for critical severity cases
- Integrated advanced text embeddings (sentence transformer) to capture contextual nuances in deficiency descriptions for predictive modelling, achieving 80% accuracy with improved recall for high-severity deficiencies

Independent Game Development Project

May 2024 - Jun 2024

- Built a video game, Polar Bear Simulator, incorporating multiple gameplay features such as parkour mechanics, maze navigation, and combat systems
- Accomplished a procedurally generated Arctic world map, allowing for an expansive and unique exploration experience with varying terrains and hidden treasure
- Developed interactive NPC dialogues and quest systems, providing players with story-driven objectives and rewards

CO-CURRICULAR ACTIVITIES

1. Chinese Debate Team @ NUS

Bronze medallist in the Chinese Debate Progression Association Competition, Taiwan, representing NUS

2. Music Lover: Grade 8 in piano and grade 6 in music theory from the Association Board of Royal School of Music (ABRSM), UK