GLENDA HUI EN TAN

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EDUCATION

Carnegie Mellon University | B.S. in Artificial Intelligence (3.90 GPA) Expected May 2026
Relevant Coursework: Generative AI, Intro to Machine Learning, Autonomous Agents, AI: Representation and Problem Solving, Computer Vision, Robotics Institute Independent Study, Parallel and Sequential Data Structures and Algorithms, Great Ideas in Theoretical CS, Intro to Computer Systems

Raffles Institution Singapore
Cambridge General Certificate of Education Advanced Levels (Distinction for all subjects) Jan. 2021–Dec. 2022
Higher 3 (H3) Chemistry, H2 Chemistry, H2 Physics, H2 Mathematics, H1 Economics, H1 General Paper, Project Work

RESEARCH EXPERIENCE

Summer Undergraduate Research Fellowship, *Reliable Autonomous Systems Lab* May 2024–present
Vision and Tracking in a Smart AI Kitchen for Older Adults with Mild Cognitive Impairment
(Advised by Prof. Reid Simmons, Prof. Zackory Erickson and Dr. Pragathi Praveena from the CMU Robotics Institute)

- Developed a real-time AI system for tracking food items in a kitchen to aid elderly with mild cognitive impairment
- Built item detection component with zero shot object detection models to recognize 20 categories of food items and used MediaPipe pose estimation to determine if the detected items are in a person's hand
- Developed opened/closed cabinet detection component using depth camera frames that is scalable to different kitchen configurations with minimal calibration; determined locations of detected items using bounding boxes and 3D coordinates

Lead Research Intern, *Defence Science Organization National Laboratories Singapore* May 2021–May 2022
Anti-virus Autobots: Predicting More Infectious Virus Variants for Pandemic Prevention through Deep Learning

- Conceptualized and developed a transformer neural network to predict future more infectious COVID-19 variants
- Collected 66,705 experimentally-validated virus-human protein interactions in the form of primary sequences as training inputs from protein-protein interaction databases
- Implemented masked language modeling pre-training, sharpness-aware minimization and data augmentation, improving model accuracy to 90%; generated 3D structures of the model's proposed COVID-19 variants using Phyre2

Lead Research Intern, *Defence Science Organization National Laboratories Singapore* May 2020–June 2021
Stool Recognition for Colorectal Cancer Detection through Deep Learning

- Conceptualized and developed a stool recognition neural network to detect colorectal cancer with 94% accuracy
- Collected original dataset with 1610 training images of 3 categories (stool with blood, healthy stool and no stool)
- Developed and trained a DiffAugment StyleGAN2 generative adversarial network to generate realistic images of the 3 categories, overcoming the lack of training data

PUBLICATIONS

1. G. Tan, K. Goh and B. Shen, "Stool Recognition for Colorectal Cancer Detection through Deep Learning," *IEEE 4th International Conference on Computing and Machine Intelligence USA (ICMI),* April 2025 | *arXiv*, 2024.
2. G. Tan, J. Han, R. Ding and P. Kondapalli, "Vision and Tracking in a Smart AI Kitchen for Older Adults with Mild Cognitive Impairment," *Meeting of the Minds Undergraduate Research Symposium CMU,* April 2025.
3. C. Chan and G. Tan, "AI vs Human Creativity: Investigating the Effectiveness of AI-Generated Advertisements", *National Conference of Undergraduate Research USA*, 2025.
4. G. Tan and C. Szalkowski-Ference, "The Role of Artificial Intelligence in Art Restoration," *WOVEN: An Interdisciplinary Journal of Dietrich College*, Issue 4, Spring 2024.
5. J. Kubica, R. Kumar, G. Tan et al, "The fourth annual Carnegie Mellon Libraries hackathon for biomedical data management, knowledge graphs, and deep learning," *BioHackrXiv* 2023.
6. G. Tan, T. E. Koay and B. Shen, "Predicting More Infectious Virus Variants for Pandemic Prevention through Deep Learning," *International Journal of Artificial Intelligence and Applications (IJAIA)*, vol. 13, no. 4, July 2022 | *4th International Conference on Machine Learning and Applications Denmark (CMLA)*, vol. 12, no. 11, June 2022 | *arXiv*, 2022.

HONORS AND AWARDS

CMU Summer Undergraduate Research Fellowship	Summer 2025
CMU Office of Undergraduate Research and Scholar Development Presentation Award	Spring 2025
CMU School of Computer Science: Dean's List with High Honors	Fall 2024, Spring 2024, Fall 2023
Regeneron International Science and Engineering Fair USA	2022
Singapore Science and Engineering Fair Gold Award	2021, 2022
Agency for Science, Technology and Research Science Award	2021–2022
General Certificate of Education Advanced-Level Academic Excellence Award	2022
RoboCup Asia-Pacific Aichi Japan: 1st Place in Rescue Line category	2021
Global Youth Science and Technology Bowl: Grand Prize Bronze Award in Physics and Engineering Category	2021
Singapore University of Technology and Design Research & Innovation Award: Healthcare	2021
Gold Medalist at Singapore Chemistry Olympiad, 1 of only 2 female gold medalists in the country	2021
Young Defense Scientists Programme Scholarship	2019–2020

TEACHING EXPERIENCE

Teaching Assistant for Concepts in Artificial Intelligence (07-180) Pittsburgh, PA
Course Instructor: Prof. Reid Simmons Spring 2025

- Introduced fundamental AI concepts such as neural networks, generative AI, reinforcement learning, Markov decision processes and AI ethics to 100 first-year students in the CMU School of Computer Science
- Designed assignments, exams and a 2048 reinforcement learning competition for students to apply their AI skills
- Led recitation sessions and held weekly office hours to support students in their learning

EXTRACURRICULARS AND LEADERSHIP ACTIVITIES

AI in Action Seminar Series Pittsburgh, PA
Organizing Team Member Fall 2024–present

- AI in Action invites AI leaders and visionaries to share their insights and experiences with the CMU community. Previous speakers include Nobel Laureate Prof. Geoffrey Hinton and Aurora CEO Chris Urmson.
- Reached out to experts in the AI field to be potential AI in Action speakers
- Developed and edited a video series interviewing CMU AI professors on their research experiences and views on the future of AI in society (Prof. Reid Simmons, Prof. Ding Zhao, Prof. Zico Kolter and Prof. Graham Neubig)

CMU Star Wars Club Pittsburgh, PA
Co-founder and President Fall 2023–present

- Co-founded the CMU Star Wars Club in Fall 2023 to build a community of Star Wars fans across the CMU galaxy
- Recruited 115 members in Spring 2024; grew membership to 218 members in Fall 2024 and 249 members in Spring 2025
- Designed and led schoolwide events such as May the 4th Celebration and Rise Against Hunger
- Lightsaber combat instructor; choreographed lightsaber performances for CMU SCS Day and ScottyCon
- Lead programmer for BB8 Droid-Building Project (a collaboration with CMU Robotics Club)

SKILLS

Deep Learning/Machine Learning Libraries: Tensorflow | Keras | PyTorch | OpenCV | NumPy | Pandas
Programming Languages: C | Python | Java | SML | C++ | Swift | HTML/CSS | JavaScript
Other Software: XCode | Android Studio | Arduino | React Native | Node.js | Unity | Unreal Engine 4 | LaTeX