

Zhang Ke Wei

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EDUCATION

- **Raffles Institution** Singapore
Secondary School, Integrated Program; GPA: 3.90 Jan 2014 – Dec 2017
- **Raffles Institution** Singapore
Junior College, GCE A-Level; 8 Distinctions Jan 2018 – Dec 2019
- **Georgia Institute of Technology** Atlanta, GA
Bachelor of Science in Computer Science. Expected Graduation: Spring 2026 Jul 2022 – 2026

EXPERIENCE

- **Agency for Science, Technology and Research (A*STAR)** Singapore
Research Intern - Institute of High Performance Computing (IHPC) Nov 2021 – Apr 2022
 - **Feature Selection using Monte Carlo Tree Search:** Worked as part of the Artificial Intelligence for Genetic Analysis Group. Developed a feature selection pipeline using Monte Carlo Tree Search on Single Nucleotide Polymorphism (SNP) datasets. Feature selection was shown to be effective across an array of prediction methods, improving predictive performance on models by up to 20%
 - **Alzheimer's Disease Prediction:** Investigated effectiveness of deep learning methods for genetic analysis. Implemented deep learning and reinforcement learning to predict Alzheimer's disease using PyTorch and Gym, achieving an Area Under Curve (AUC) of up to 0.72 on the evaluation set.
 - **Literature Review:** Reviewed literature on statistical learning and machine learning, including Logic Regression, Monte Carlo Markov Chains and AlphaGo, for genetic analysis and implemented quick proof-of-concept demonstrations to test feasibility of methods.
 - **External Partner Presenter:** Delivered presentations to doctors to communicate research progress and results of literature review
- **Raffles Institution - Science Research Programme** Singapore
Low-Cost 3D-Printed Prosthetic Hand Apr 2018 – June 2019
 - **Fast Fourier Transform Signal Detection:** Wrote a signal processing model to translate electromyography (EMG) signals from time domain to frequency domain and predict intended hand gestures, achieving up to 80% accuracy. Conference paper accepted and participated in the 2019 Singapore Science and Engineering Fair.
 - **Characterisation of Prosthetic Hand:** Characterised strength, degrees of freedom and electrical properties of hand and unique material developed (ABS/CNT) through experiments.
 - **Arduino Libraries:** Wrote Arduino libraries used by the team for prototypes and experiments, including ones to actuate the prosthetic hand.
 - **Stakeholder Research:** Interviewed patients and rehabilitative medicine professionals from Tan Tock Seng Hospital to understand pain points and stakeholder needs, incorporating their concerns into the final design, including the cosmetics of the hand.

LEADERSHIP

- **Singapore Armed Forces - Republic of Singapore Navy** Singapore
3rd Sergeant, Sea Security Group Apr 2020 – Nov 2021
 - **Communications Specialist:** Managed a team of three to oversee day-to-day maintenance of equipment and crafting of reports with the overall objective of maintaining accurate and timely communication between assets and command. Received Outstanding Performance Award, issued to best performing team member in each batch.
 - **Training and on-boarding:** Spearheaded the creation of a training guide to systematically impart knowledge to incoming trainees, speeding up and improving quality of training.

PROJECTS

- **Image Classifier:** Image classifier trained with transfer learning on PyTorch, built with streamlit and hosted on GitHub Pages. [Link here.](#)
- **Personal Website:** Built personal website and blog with Jekyll.

SKILLS

- **Languages:** English, Chinese, Malay
- **Technologies:** Python, PyTorch, pandas, numpy, Ruby, Jekyll