WONG SHI XUAN GABRIEL

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EDUCATION

Singapore University of Technology and Design (SUTD) **May 16 to Aug 19**

Bachelor of Engineering (Information Systems Technology and Design)

- Computer Science major, with a specialization in Artificial Intelligence and Business Analytics
- Current GPA of 4.76/5.0, on track for summa cum laude, expected to graduate in August 2019
- Awarded SUTD Asian Leadership Programme Scholarship
- Awarded SUTD Honours List for Freshmore Terms for placing within top 10% of cohort

NUS High School of Mathematics and Science **Jan 08 to Dec 13**

Diploma with Honours in Mathematics, Chemistry and Physics, and Major in Computing Studies

- GPA of 4.3/5.0 (Distinction)
- Coursework: Database Design, Data Structures and Algorithms, Software Engineering, Computer Networking

WORK EXPERIENCE

Grab Holdings Inc. **Sep 19 to Present**

Data Scientist (Analytics)

- Built a bot on Slack in one week using microservice architecture to automate crowdsourced annotation of data for NLP tasks, collecting 2819 responses from 73 participants in its first two months
- Applied text analytics on organization's SQL queries to automate the task of requirement gathering to faciliate dimensional modelling for a new Analytics data warehouse
- Adapted same textual model for the analysis of daily ETL queries, identifying 87 unique jobs of duplicated work, totalling 18 hours of compute per day, and $5579 per month
- Implemented and optimized PySpark ETL jobs, reducing run time of a bottleneck job from 1 hour to 30 minutes

Taiger Singapore Pte. Ltd. **May 18 to Nov 18**

Data Science Research Intern

- One of 7 selected from over 300 applicants for the Summation Programme by SGInnovate, a deep tech accelerator
- Researched and developed a signature extraction engine alone from scratch, that is now used in client sales demos
- Worked with computer vision and natural language processing frameworks such as OpenCV, TensorFlow and NLTK

COMPETITIONS & HACKATHONS

AI for Accessibility Hackathon 2019 – Winner **Oct 19**

- One of four winning teams at the hackathon, with the goal of creating AI solutions to help people with disabilities
- Developed an idea that simplifies social interaction for people with autism and help them in day-to-day conversation
- Created a prototype within an hour that enhances verbal communication with visual aids to improve understanding

Startup Weekend Singapore Mega 2018 – Most Impactful Idea Winner **Sep 18**

- Competed over the course of 48 hours, winning against over 250 participants across 46 teams
- Developed the idea for rapid production of educational audio resources to encourage lifelong learning
- Conducted various iterations of market research and customer validation to determine a viable business plan
- Built a demonstrative proof-of-concept through a combination of text-to-speech software and Google APIs

DSTA Cyber Defenders Discovery Camp 2018 – First Place **Jun 18**

- Won First Place in both University/Polytechnic and Open categories, beating out 50 local and 7 international teams
- Exploited vulnerable remote servers using common reconnaissance tools such as Nmap, Dirb, Nikto and Metasploit
- Infiltrated a WiFi network via wireless network tools in Aircrack-ng to remotely hijack a remote-operated drone

What The Hack @ SUTD – Best Environment Idea, Best Hardware Hack **Sep 17**

- Won the Best Environment Idea and Best Hardware Hack awards, earning prizes worth $18,000
- Worked in a team of 4 to create a personal wearable device for haze prevention using air-curtain technology
- Developed the IoT functionality of the device using the ESP8266, an Arduino-compatible WiFi module

DSTA Cyber Defenders Discovery Camp 2016 – First Place **Jun 16**

- Beat over 400 students, winning the First Place in the University/Polytechnic category, alongside an $8,000 cash prize
- Used common penetration testing tools in Kali Linux such as Aircrack-ng, Nmap, Wireshark and Metasploit to infiltrate wireless networks and identify vulnerabilities in local network machines

PERSONAL PROJECTS

SUTD Hostel Air-Conditioning Manager **May 19 to Jul 19**

- Built an alert system that monitors air-conditioning credit amounts via web scraping, with over 90 active users
- Created a Telegram bot as a user interface, as well as a Vue.js dashboard for usage tracking

One-Shot Image Recognition with Siamese Neural Networks **Apr 18 to Aug 18**

- Experimented with one-shot image classifiers using Siamese convolutional neural network classifiers
- Created and trained models to match different handwritten signatures signed by the same owner
- Utilised open-source forgery datasets as well as images synthesised by generative adversarial networks (GANs)
- Self-learnt popular deep learning frameworks on Python such as TensorFlow and Keras

MouseHunt (Facebook Game) Bot with CAPTCHA Solver **Jan 18 to Feb 18**

- Designed and developed a Selenium-powered bot to play Facebook game MouseHunt
- Circumvented anti-bot CAPTCHAs through image pre-processing with OpenCV and OCR with Tesseract
- Deployed bot on a Raspberry Pi, as well as an Amazon Elastic Cloud Compute (EC2) server

SUTD Facilities Automated Booking System **Jan 18 to Feb 18**

- Built and deployed a Python server to automatically carry out bookings on SUTD web portal via Selenium
- Created an Android application using React Native for user interface

SUTD Automatic Course Downloader **Oct 17**

- Built a Selenium application to download course information from SUTD Learning Management System
- Developed and completed project in 10 days, downloading 30GB of information from 194 courses

SCHOOL PROJECTS

OpenAI Gym: Car Racing – Reinforcement Learning **Jun 19 to Sep 19**

- Developed an imitation learning approach for reinforcement learning to achieve state-of-the-art scores with a 90% reduction in training time
- Analyzed CNN-based model using Layer-Wise Relevant Propagation to visualize spatially significant input regions

Automated Coffee Barista – Software and Electronics Engineer **Dec 18 to Feb 19**

- Designed and built a system for automated coffee serving with a 6-axis robotic arm
- Programmed robot movements and sensor controls on a Raspberry Pi using ROS and Arduino
- Worked in collaboration with SUTD faculty as the star EPD showcase for Open House 2019, with over 4000 visitors

Computer Vision: Crowd Detection – TensorFlow Production and Deployment **Oct 17 to Dec 17**

- Awarded Singtel Best Project award (2nd place) for the application of IoT systems
- Built a CNN model using TensorFlow to predict crowdedness in a location
- Deployed the model on a camera-fitted Raspberry Pi to obtain live updates on crowd levels in locations around school

Chinese New Year (CNY) 2017 Street Light-Up – Front-End Web Developer **Dec 16 to Jan 17**

- Created a web application, allowing users to send New Year greetings to a display screen
- Screen was set-up for public display in Chinatown as part of the annual CNY festive decorations, lasting 21 days
- Developed a front-end display using HTML, CSS & JavaScript, through collaboration with Kreta Ayer-Kim Seng CCC

CO-CURRICULAR ACTIVITIES

SUTD Undergraduate Teaching Opportunities Programme – Teaching Assistant **Sep 16 to Jan 19**

- Provided focused coaching for a small group of peers as a teaching assistant in Physics bootcamp, resolved queries during lectures and guided them through cohort exercises with basic problem-solving steps
- Helped students with in-class practices for a Python introductory course, prepared teaching materials for and conducted extra-curricular consultation sessions
- Assisted workshop instructors in LaTeX course for peers, provided guidance to participants during practice exercises

SUTD Digital Design and Development Club – Workshop Lead, Instructor **Sep 16 to May 17**

- Designed, led and conducted a 60 mins workshop on creating IoT devices with Arduino during SUTD Open House 2017, and inspired over 50 prospective students to apply to SUTD
- Prepared course materials for 3 workshops on Python, CSS, and Java, and conducted lectures and practical exercises for experiential learning with more than 100 participants across all workshops
- Aided in the conduct of ISTD faculty outreach workshops to National Junior College students, and guided them through several hands-on exercises on the basics of procedural programming