WONG SHI XUAN GABRIEL

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SKILLS

Data Science and Deep Learning
Python (TensorFlow, Keras, OpenCV, NLTK, Pandas), R

Web Scraping and Automation
Selenium, BeautifulSoup, Telegram Bot

Web and App Development, Databases
HTML, CSS, JavaScript, React, React Native, Vue, Jekyll, Firebase, MySQL

Electronics and Miscellaneous
Arduino, Processing, SolidWorks, ROS

EDUCATION

Singapore University of Technology and Design (SUTD)　　　　　　　　　　　　　**May 16 to Present**
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)
- Awarded CCA Achievement Award (2011, 2012, 2013)
- Coursework: Database Design, Data Structures and Algorithms, Software Engineering, Computer Networking

WORK EXPERIENCE

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
- Built a document processing pipeline for the extraction, classification and post-processing of signatures
- Devised methods for textual data extraction and labelling to perform named entity recognition
- Worked with computer vision and natural language processing frameworks such as OpenCV, TensorFlow and NLTK

COMPETITIONS & HACKATHONS

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 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

Past Achievements
- Singapore Space Challenge – First Runner Up　　　　　　　　　　　　　　　　**Aug 13**
- Singapore VEX Robotics Championship – 3rd Place, Judge Build Award　　　　　　**Jun 13**
- National Junior Robotics Competition – Best Programming Award　　　　　　　　　**Sep 12**
- Cyber Defenders Discovery Camp 2012 (JC/IP Category) – 3rd Place　　　　　　　**Jun 12**
- NUS IEEE Robotics Challenge – 2nd Place　　　　　　　　　　　　　　　　　　**Mar 12**

PERSONAL PROJECTS

Signature Matching with GAN-Augmented Data   **Nov 18 to Present**
- Using Siamese neural networks to match different handwritten signatures signed by the same owner
- Training generative adversarial networks (GANs) for the synthesis of signature images to tackle small dataset

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 for classification of the Omniglot dataset, as well as handwritten signatures
- 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 Web Services Elastic Cloud Compute (AWS 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

SCHOOL PROJECTS

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 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 – 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 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

SUTD Undergraduate Teaching Opportunities Programme – Teaching Assistant   **Sep 16 – 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