Melvin Kok Xinwei (Singaporean)
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Credit-Bearing Internship Availability: December 2020 - May 2021 (23 weeks)

EDUCATION

Nanyang Technological University (NTU) May 2018 – **May 2022** (Expected)

- **Bachelor of Engineering (Electrical and Electronic Engineering)**
- **Honours (Merit)** (Expected)
- Relevant Modules: (1) *Introduction to Data Science and Artificial Intelligence* (2) *Data Structures and Algorithms* (3) *From Computational Thinking to Programming* (4) *Microprocessors* (5) *Digital Signal Processing* (6) *Computer Communications*

Virtual Training and Learning Development

- Relevant EdX Modules: (1) CS50 (2) CS50 Artificial intelligence

INTERNSHIP

Thales Group – *Software Engineer Intern* May 2020 – Aug 2020

- Developed and maintained data processing backend that handled 1TB+ of data daily, used by Thales' rail systems worldwide
- Liaised with *Development Team* in Toronto for joint product development sprints

Internship Project: ***Web Application***

- Designed and implemented cloud-based data plotting tool using *Python* and *JavaScript*, served with Nginx
- Presented and demonstrated to various teams (i.e. Management, System Engineers, Software Engineers)
- Reduced time taken for root cause analysis of technical issues by 90%; led to efficient service response to customers.

ACADEMIC PROJECTS / MODULE PROJECTS

NTU Design and Innovation Project: ***Improving Deep Learning Accuracy Using GANs*** Aug 2020 – Present

- Improve classification accuracy of *Convolutional Neural Network* (CNN) using images generated by *Generative Adversarial Networks* (GANs)
- Compare two observed results (i.e. Average Accuracy, Standard Deviation) with those generated from normal and noise-generated datasets

NTU MLDA@EEE Project: ***Efficient Deep Learning on Encrypted Data*** Aug 2020 – Present

- Accelerate deep learning inference speed on data encrypted with *Homomorphic Encryption*
- Design efficient deep learning algorithms tailored for *Homomorphic Encryption* using *PyTorch*

NTU-EEE Module: ***Introduction to Data Science and Artificial Intelligence*** Oct 2019 – Nov 2019
Module Project: ***Predicting Probability of Olympian Winning Medal*** **(**Team of 3 Members)

- Developed *Probability Prediction Model* for *Olympics 2020* using *Python* on Anaconda platform
- Deployed *Imputing Technique* to enhance model prediction probability (e.g. rectifying data "integrity") upon *Machine Learning Algorithm* (i.e. XGBoost) application
- Successfully simulated outcome by developed model based on historical dataset (1910 – 2010) of *Olympic Medal Winners* to predict upcoming Olympics 2020

COMPETITION PROJECT / PERSONAL PROJECTS ACHIEVEMENTS

DSTA Today I Learned Artificial Intelligence Camp Jul 2020

- Developed Object Detection and Classification model for clothing using *TensorFlow*
- Predicted test images with 70% accuracy and entered semi-finals

Plant-e Jul 2020 – Present

- Program web server on *ESP32* using *MicroPython* for live video feed and automated watering of plants
- Integrate webserver with *Firebase* to store data
- Liaise with local Residents' Committees to integrate system into community gardens

Hsi-Illustration Apr 2020

- Developed web application using Flask for users to shop for customized watercolor portraits
- Implemented storage solution for item ordering using *PostgreSQL* and *AWS S3*

LEADERSHIP / CO-CURRICULAR & VOLUNTARY ACTIVITIES

NTU Hall 1 Hall Council – *Financial Secretary* Sep 2019 – Present

- Analyzed past expenditure as benchmarking / referencing to manage current finances for Hall 1 operation; allocated approved budget to respective 10 committees with solid justification
- Assume role as Main Liaison to coordinate with Student Affairs Office for reimbursement claims upon valid receipts / invoices submitted by 10 committees
- Involved actively in assets sourcing and procurement for Hall 1

NTU Foodcraft & Fermentation Club – *Events Director* Sep 2019 – Aug 2020

- Drafted proposals and conducted regular *Culinary Workshops* for every class comprising 20 students
- Initiated to improve hygiene protocols by including detailed steps on sanitizing equipment for participants

NTU Hall 1 Junior Common Room Committee – *Social Secretary* Sep 2018 – Aug 2019

- **Led** 8 team members to organize *Joint-Hall Halloween Event* within compressed time; successfully participated by 400 residents
- Planned, organized, executed and implemented social activities for hall residents' cohesiveness
- Managed the *Hall Cheerleading Team*, and initiated fund raising to support team's training expenses

SKILLS

- **Languages**: Python, JavaScript, HTML, CSS, SQL, C
- **Frameworks & Libraries**: Pandas, NumPy, Tensorflow, Scikit-learn, Flask
- **Tools**: Git, Docker, Azure, GitLab CI/CD
- **Programs**: LabVIEW, MATLAB, Microsoft Office 2019 (Excel, Word, PowerPoint, Outlook)