JEFFERY CAO SIMING

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Machine Learning: Tensorflow , Keras, Sci-kit Learn, Spark, Pandas, Numpy, Matplotlib, Seaborn
Software Development: Reactjs, Flask, JQuery, Ajax, HTML, CSS, MongoDB, MySQL
Programming Languages: Python, Javascript, C++, C, SQL
Others: AWS sagemaker, OpenCV, NLTK, Gensim, Matlab(Simulink), Linux, Heroku, Version Control (Git)

PROFESSIONAL EXPERIENCE

Safemode **Tel Aviv, Israel**
Data Science Intern *Jan 2020 – Present*

- Developed various *gradient-boosted* and *deep learning models* to predict drivers' behavior with telematics data
- Applied *boxcox transform* to target variable resulting in a 20% improvement in model performance
- Automated the process of hyperparameters tuning using *Bayesian Optimization*
- Built an ETL pipeline hosted on AWS to integrate mobile telematics SDK of partnering company
- Developed optimized Python and SQL scripts that extracts and manipulates data of over 41 million rows

Ramco Systems Limited, Innovation lab **Singapore, SG**
Software Engineering Intern *May 2019 – Aug 2019*

- Implemented VGG-based CNN for a liveness detection feature on company's facial recognition product
- Constructed a facial image dataset from video recordings to train and evaluate models using OpenCV
- Developed a dashboard web application providing customers with data analytics capabilities using Flask framework
- Created scripts utilizing facial landmarks to boots the quality of facial detections

Nanyang Technological University **Singapore, SG**
Undergraduate Algorithm Researcher *Sep 2018 – June 2019*

- Researched on novel biologically plausible neural network that uses spike-based input features
- Developed a new learning algorithm incorporating momentum with *Spike Timing-Dependent Plasticity* to improve model's convergence rate and accuracy
- Authored a research paper documenting research finding

PROJECT ACCOMPLISHMENTS

Deep Reinforcement Learning

- Developed a Deep Q-learning algorithm that considers continuous state spaces using Pytorch and Numpy
- Applied algorithm to solve the Atari Pong environment in OpenAI gym and visualized results using Matplotlib

Real-time Object Detector

- Implemented YOLOv3 object detection model with weights trained on coco dataset using OpenCV
- Enabled real-time object detection by connecting model predictions with web camera video stream

Optical Text Recognition

- Developed a text recognition system that extracts text from images using *EAST text detector* and *Tesseract OCR engine*
- Improved on system robustness by utilizing a 4-point transform and image denoising techniques in OpenCV

Stewart Platform

- Collaborated in a team of 4 to build a 3D-printed Stewart Platform with 6 degrees of freedom
- Implemented inverse kinematics algorithms, PID controller and digital filters in C++ to allow for precise control

EDUCATION

Nanyang Technological University (NTU) **Singapore, SG**
Bachelor of Engineering in Electrical and Electronic Engineering *Aug 2017 – Jun 2021*

- **Cumulative GPA: 4.91/5.00**|First Class Honors with Highest Distinction
- **Dean's List** 2018/19, School of Electrical and Electronic Engineering, NTU (Top 5%)
- Title of '*Most Promising Leader'* and 2nd runners up in *Best Ideation Award* and*,* NTU PEAK Leadership Program
- Semester exchange program at University of Waterloo

Andy Grove Scholarship for Intel's Employees' Children

- Awarded for exceptional academic record, demonstrated leadership and communal participation