PEERANAT (TOTO) TOKAEO

peeranat.tokaeo@u.yale-nus.edu.sg | 28 College Avenue West, Singapore 138533 | +65-8655-4536
Github: https://github.com/totoyoyo

EDUCATION

Yale-NUS College, Singapore **Aug. 2017 - May 2021**

- Bachelor of Science (Honours) in Mathematical, Computational & Statistical Sciences
  - Computer Science focus, CAP 4.80/5.00
- Awarded the Yale-NUS Global Leader Scholarship, full-ride scholarship worth $223,000
- Member of the Yale-NUS Badminton Team

Columbia University, New York City, USA **Aug. - Dec. 2019**

- Visiting Student at Columbia College at the Morningside Heights Campus
- Enrolled in Fundamentals of Computer Systems, Intro to Databases, Probability and Statistics, Intro to Electrical Engineering
- GPA: 4.25/4.00

Ruamrudee International School, Bangkok, Thailand **Aug. 2013 - Jun. 2017**

- International Baccalaureate Diploma with Honours
- Top IB scorer with an IB score of 44/45
- Enrolled in Physics, Mathematics, and Chemistry Higher Level courses

SPECIALIZED SKILLS

Skills:

- Programming Languages: Python, OCaml, R, SQL, C, C++, HTML, CSS
- Tools: MySQL, REST API, LaTeX, OpenCV, Keras, Git, Github, Neo4j, Redis
- Others: Microsoft Office, Google Suite, Windows, Linux

Languages:

- English (Fluent), Thai (Native)

PROJECTS

Panoramic Image Stitching:

- Built a program using OpenCV for Python to stitch images of scenes together to form a panorama
- Used SIFT and RANSAC to automatically detect key points of images
- Applied the homography transformation to align images based on key points that share a planar surface

Depth Estimation From Stereo and Video:

- Built a program using OpenCV for Python to create depth maps from stereo images or video of a scene
- Utilized epipolar geometry to derive 3D information from 2D images
- Implemented optimization techniques and Markov random field to remove noise from generated depth maps

Image Classification and Localization:

- Used Keras on Python to train a convolutional neural network that classifies images based on CIFAR-10 data

EXPERIENCE

Mathematics Research Assistant **May – Aug. 2019**

- Granted an award from the J Y Pillay Global-Asia Programme worth $2600
- Worked under Professor David Smith on generalizing the Fokas transform to solve higher order partial differential equations that describe initial interface problems
- Developed a simpler, programmable version of the Fokas transform that does not require complex analysis and ad-hoc derivations

DBS Bank, *Data Science Intern* **May – Jul. 2018**

- Developed R software to automate the exclusion of gifts-related spending from input tax reclaim
- Assisted in reformatting the data structures used by Vickers Securities to facilitate the acquisition by DBS Bank
- Assessed the appropriate tax technology transformations in preparation for Singapore's new GST reverse charge laws

AWARDS

Yale-NUS Hackathon Data 2.0, *Winner* **Mar. 2018**

- Investigated the effects of car sharing on individual carbon footprint for sustainability solutions
- Analysed and presented data through R to show trends in transportation efficiency in relation to carbon emission