

SI YU TAN (LIONEL)

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OBJECTIVE

I am a Computer Science graduate student, seeking opportunities in software development and data science.

EDUCATION

Master of Engineering, Cornell University Expected 2023

Bachelor of Engineering, Imperial College London 2019 - 2022

- Relevant Coursework: Discrete Mathematics (Algorithms), Software Systems (Databases and Networks), Signals and Systems, Instruction Architectures and Compilers, Machine Learning, Advanced Computer Architecture, Deep Learning, High Level Programming
- Head of Department's Prize 2019/20 for the Top student in Year 1 of EEE
- Dean's List (Year 1) 2019/20 and Dean's List (Year 2) 2020/21

SKILLS

Technical Skills	Python, C++, F#, SystemVerilog, HTML, CSS, Javascript, Typescript
Web Programming Technologies	Flask, FastAPI, React, Redux, Node.js
Data Science	SQL, Tableau, Tensorflow, Keras, Pytorch, OpenCV
Cloud Technologies	Amazon Web Services, Google Cloud Platform
Miscellaneous Technologies	Linux, Git, Jira, Confluence

EXPERIENCE

Software Developer Intern Oct 2022 – Dec 2022
Squarepoint Capital *Singapore*

- Worked closely with quantitative researchers and analysts to develop robust and performant data pipelines for numerous timeseries datasets.
- Engineered a data caching API which allows users to store datasets generated from external APIs, decoupling dataset generation from main application logic and reducing memory usage and start up time for applications.
- Skills: Python, FastAPI, MongoDB, Kubernetes, Helm.

Software Developer Intern Jan 2017 - Jan 2019
Amazon *Cambridge, United Kingdom*

- Designed and built an internal dataset labelling user interface tool with autocomplete and error checking features, enabling generation of datasets for training of new natural language understanding models for Alexa.
- Trained a Meaning Representation Language to Sentence generation model and integrated it with the tool, improving dataset labelling experience.
- Skills: Python, Flask, JavaScript, Docker, NLP.

Technology Developer Intern Jun 2021 – Aug 2021
Barclays *United Kingdom*

- Implemented changes to the user interface of the Wholesale Lending Book building application, speeding up loading time and enhancing ease of usage for clients.
- Created a performance metric tool to track typescript functions, enabling developers to identify bottlenecks.
- Improved the efficiency of the IT support team in identifying and resolving blocked trades by adding filtering and querying features.

- Skills: React, Redux, Typescript, Java, Java Springboot.

PROJECTS

BEng Final Year Project.

- Explored approaches to incorporate inertial measurement unit (IMU) data into deep learning-based camera pose estimation as an additional supervision signal, with the aim of ensuring robust pose estimation learning against inaccurate pseudo ground truths.
- Created data collection scripts to generate synthetic datasets of IMU data with image frames using AirSim's Python API and to collect real-world datasets using a smartphone.
- Trained and evaluated the MapNet model and its modified versions using several approaches to incorporate IMU data using the generated datasets to understand the impact of IMU data.
- Skills: Python, PyTorch, AirSim, 3D Computer Vision

Undergraduate Research Project in the Manipulation and Touch Lab @ ICL.

- Built a software controller and 3D printed parts for a novel underactuated Robotic Finger as part of a project to design low-cost and robust grippers capable of adaptive grasping.
- Improved the speed and accuracy of the Computer Vision testing script used to track trajectory of the Robotic Finger.
- Trained several Machine Learning models to predict controller parameters required for a final position of the robotic finger's trajectory.
- Skills: Matlab, Solidworks, Python, Scikit-Learn, Keras

Mars Rover Project.

- Implemented the Vision Subsystem of the Rover on a Terasic DE10-Lite FPGA to detect coloured balls from a Camera Input, achieving a final grade of 83%.
- Developed Convolution filters, such as Gaussian Filter and Erosion Filter, and Perspective Transform Mapping on hardware efficiently using Verilog.
- Tested computer vision algorithms' effectiveness using Python OpenCV and designed Altera-Modelsim simulations to test the functionality of the Verilog components.
- Skills: Verilog, C, Python-OpenCV

EXTRA-CURRICULAR ACTIVITIES

Imperial College Data Science Society, Head of Operations.

- Led the brainstorm, planning and execution of Data Science Workshops, Hackathons and assisted in organising Industrial Networking Events and Advanced Analytics Consulting Projects.
- Successfully executed Introduction workshops and DataCon 2020, ICDSS's conference on sustainability recovery with Data Science for 1000-member strong society.
- Acquired a sponsor for the society's flagship event and one of London's largest school-based Hackathons with over 200 participants.

LEADERSHIP

Lieutenant in the Singapore Armed Forces. Served mandatory National Service from Jan 2017 – Nov 2018 and was a Detachment Commander of 2 Commando Detachments (2nd & 4th Company) where I led my men through Overseas Training and Bilateral Training Exercises.