

Education

New York University

New York, NY

MS IN COMPUTER ENGINEERING | CGPA: 3.78

Aug. 2022 - May. 2024

- Graduate Research Assistant for a Sim2Real project with industry collaborators working on robotics for manufacturing automation.
- Teaching Assistant for the graduate ROB-GY 6203 Robotics Perception course for Fall 2023.
- \$14,000 NYU merit scholarship awardee worth.

Taylor's University

Subang Jaya, MY

B.ENG. (HONS) IN ELECTRICAL AND ELECTRONIC ENGINEERING | CGPA: 3.65

Mar. 2015 - Aug. 2019

- Undergraduate Research Assistant for a project on autonomous monocular target-tracking UAV.
- 5 times Dean's List and 2 times Book Prize awardee.
- \$10,000 Taylor's Grand Challenges Scholarship awardee.
- B.Eng Thesis: Development of Low Computational Power Vision Tracking Algorithm on Embedded System.

Research Experience

New York University

New York City, NY

GRADUATE STUDENT RESEARCHER

Oct. 2022 - Present

- **Advisor:** Chen Feng @ AI4CE Lab
- Leading research project on optimal Neural Radiance Fields (NeRF) for autonomous robotics. (In Progress)
- Co-led a project on Sim2Real for robotics control via generative models and self-supervised learning. Improved key metrics significantly by ~2x.
- Worked on very large-scale datasets and performed distributed training with PyTorch and Slurm on NYU's Greene supercomputer cluster.

Taylor's University

Kuala Lumpur, MY

ML RESEARCH ENGINEER

Aug. 2019 - Apr. 2020

RESEARCH ASSISTANT

Dec. 2018 - Aug. 2019

- **Advisor:** Swee King Phang @ Taylor's Unmanned Aerial Vehicle (UAV) Research Group
- Developed a real-time monocular target tracking algorithm for autonomous UAV operations with a light on-board computer via a novel buffer-based Siamese CNN. No pilots required. Preprint at <https://arxiv.org/abs/1910.08263>
- First-authored publication in the American Institute of Physics Conference Proceedings.

Professional Work

IBM

New York City, NY

DATA SCIENCE INTERN

May. 2023 - Aug 2023

- Developed a MLOps-compliant NLP starter-kit via IBM's Large Language Foundation Models.
- Improved tasks accuracy by +20% and reduced development time from 2 weeks to 1 day.
- End-to-end deployed models OpenShift & Kubeflow, and reduced deployment time by 90%.
- Created a Retrieval Augment Generation Q&A chatbot with IBM's Foundation Model and other open-sourced model such as LLAMA-2.

MoneyLion Inc

Kuala Lumpur, MY

DATA SCIENTIST II

Sep. 2020 - Aug 2022

- Spearheaded end-to-end projects maximizing user acquisition funnel's return per unit risk, improving acquisition by ~100% and lowering credit risk while improving system run-time by ~7x.
- Led feature development projects including a pricing optimization tool, improving top-line metrics by ~17%, and an optimal lead bidding algorithm (CAC vs LTV) for a high-priority lead generating channel with C-level stakeholders.
- Demonstrated proficiency in complex large-scale online statistical testing via daily experimentation.
- Led a seamless, large-scale multi-stage production database migration effort with Data Engineering for infrastructure enhancement.
- Worked with MLOps to establish continuous model monitoring and automated retraining pipelines to ensure performance across time.
- Served as a mentor to new Data Scientists on all matters from Machine Learning modelling, to live statistical testing, to stakeholder management.

Honors & Awards

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|------|---|------------------|
| 2022 | NYU Merit Scholarship , New York University | NY, USA |
| 2019 | Best High Impact Research Award , 12th International Engineering Research Conference | Selangor, MY |
| 2019 | Winner & Best Social Impact Award , CodeathonX KL 2019 | Malaya Uni, MY |
| 2018 | Best High Impact Research Award , 11th International Engineering Research Conference | Selangor, MY |
| 2018 | Global Finalist & 1st Runner-Up , NASA SpaceApp Challenge 2018 | Kuala Lumpur, MY |
| 2015 | Taylor's Grand Challenge Scholarhsip , Taylor's University | Selangor, MY |

Projects

Leave Your Clothes Behind (LYCB)

New York University

COURSE PROJECT

May. 2023

- Created a novel framework to extract virtual-wearable 3D garment models from monocular videos.
- Pipeline covered tasks such as semantic segmentation, structure from motion (SfM), novel view synthesis, and 3D reconstruction.
- Received full mark for the project in the course. Project can be found live at <https://github.com/IamShubhamGupto/LYCB>.

Arbitrage Bot

PERSONAL PROJECT

Aug. 2018 - Jun. 2019

- Wrote a Python algorithm to arbitrage cryptocurrencies. Capable of performing multi-step arbitrages between a chain of trading pairs.
- Developed a paper-trading (simulation) application with live feed data from various exchanges for real-time validation.
- Capable of parsing 400+ trading pairs across multiple exchanges within 2 sec.

Leadership & Community

1stDayHack 2020

Selangor, MY

FOUNDER & LEAD ORGANISER

Sep. 2019 - Jan. 2021

- Organised and led Malaysia's first Machine Learning Workshop+Hackathon for 60 secondary students from across Peninsular Malaysia.
- Created a beginner-friendly ML course, ran ML workshops, and oversaw the entire program.
- Wrote and produced a free multi-chapter video based crash course, covering topics from introductory Python to Deep Learning. My embarrassing notes can be found at <https://tinyurl.com/1stdayhack>.
- Created 1stDayKit, a ML toolkit that consolidating 12 state-of-the-art models into one easy to use package. Written with Python and PyTorch.

CampusHero

Kuala Lumpur, MY

COMMITTEE MEMBER

Oct. 2017 - Aug. 2019

- Ran 20+ student community events in Malaysia with leading partners ranging from Google to Microsoft and Petronas.
- Impacted 300+ students in the Peninsular Malaysia through expert-mentoring sessions, hackathons and Python workshops.

Skills & Courses

PROGRAMMING

Python · Matlab · Assembly · Bash · Kubernetes · Docker · Slurm · LaTeX · Verilog · SQL

MACHINE LEARNING COURSES

PyTorch · Tensorflow · OpenCV · 3D Vision · OpenAI Gym · Generative AI · Time-Series Modelling
Deep Learning · Image & Video Processing · Probability & Stochastic Processes · Real-Time Embedded Systems
Control Systems · Signals & Systems · Computing Systems Architecture · Computational Statistics

References

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HEAD OF DATA SCIENCE, IBM