Keifer **Lee**

ML Researcher · Computer Engineering Major

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Skills

PROGRAMMING	Python · Matlab · SQL · Bash · Assembly · Verilog · REST · Git · Solidity · Kubernetes · Docker
MACHINE LEARNING	PyTorch · Tensorflow · Scikit-Learn · Computer Vision · LLMs · 3D Vision · Robotic Perception · Generative AI
ANALYTICS	A/B Testing · DVC · DBT · Quarto · Snowflake · Redshift · OpenShift · Airflow · Elasticsearch

Experience

IBM
New York City, NY

Data Science Intern — *May. 2023 - Aug 2023*

- Developed a **MLOps-compliant NLP** starter-kit covering topics such Topic Classification via IBM's **Large Language Foundation Models**.
- Improved model accuracy by **+20%** and reduced development time from **2 weeks** to **1 day**.
- **Deployed** model via Red Hat's containerization platform, **OpenShift** & **Kubeflow**, demonstrating the ability to reduce 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**.

New York University - AI4CE Research Lab
New York City, NY

Graduate Student Researcher — *Oct. 2022 - Present*

- Leading research project on optimal **novel view synthesis** via **Neural Radiance Fields (NeRF)** for autonomous robots and VR applications.
- Co-led an industrial project on **Sim2Real transfer** for robotic control; improved key metrics by tremendously via **contrastive self-supervised learning**.
- Worked on very large-scale datasets and performed distributed training with **PyTorch** and **Slurm** on NYU's **supercomputer cluster**.

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 taken with ML models and data-driven product feature tweaks, improving acquisition by **~100% and lowering credit risk** while improving system run-time by **~700%**.
- 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.
- Conducted daily experimentation work from exploratory analysis to large-scale statistical tests such as **A/B tests** for decision making.
- Created advanced **data visualization dashboards** via **SQL** for **Redshift** and **Snowflake** daily to provide near **real-time metric monitoring**.
- Led a large-scale (TB) database migration effort with Data Engineering using **DBT** and Codefresh **CI/CD** for seamless transitions.
- Worked with **MLOps** to establish **continuous model monitoring** and **automated retraining pipelines** for ML models. Consulted the team on procedures and key metrics to measure from both technical and product perspectives.
- Demonstrated effective knowledge transfer by **on-boarding 3 new team-members** onto complex projects as a mentor.

Taylor's Unmanned Aerial Vehicle (UAV) Research Group
Taylor's University,MY

ML Research Engineer — *Aug. 2019 - Apr. 2020*

Research Assistant — *Dec. 2018 - Aug. 2019*

- Developed an **autonomous UAV** for **real-time monocular target tracking** with a light on-board single-board computer. **No pilots required**.
- Led the end-to-end development of a novel deep-vision algorithm for autonomous UAVs, from conceptualization, to deriving solutions, implementation and analysis. Result outperforms contemporary state-of-the-art model's accuracy with equal or higher computation efficiency.
- Designed and trained various ML models with terabytes of data on both local machines and cloud servers via Bash.

Education

New York University
New York, NY

MS in Computer Engineering | CGPA: 3.78 — *Aug. 2022 - May. 2024*

- Accepted and enrolled in the programme with a merit **scholarship worth $14,000**.
- Served as a **Graduate Research Assistant** @ AI4CE Lab on an industrial robotics control project for Spring 2023.
- **Teaching Assistant** for the graduate Robotics Perception course for Fall 2023.

Taylor's University
Subang Jaya, MY

B.Eng. (Hons) in Electrical and Electronic Engineering | CGPA: 3.65 — *Mar. 2015 - Aug. 2019*

- 5 times Dean's List and 2 times Book Prize Awardee.
- Awarded with the **Taylor's Grand Challenges Scholarship ($10,000)** for academic excellence.
- Undergraduate research assistant with the Taylor's Unmanned Aerial Vehicle Research Group.

Projects & Extracurricular Activities

Leave Your Clothes Behind (LYCB)

New York University

Course Project *Feb. 2023 - May. 2023*

- Created a framework to convert video of clothing into virtual-wearable 3D garment models for applications in AR and VR.
- 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`.

Cryptocurrency Arbitrage Bot

Personal Project *Aug. 2018 - Jun. 2019*

- Wrote a **Python algorithm** to arbitrage Cyrptocurrencies; e.g. Ethereum, Bitcoin, Solana. Capable of performing multi-step arbitrages between a chain of trading pairs.
- Developed a **paper-trading simulator** with live feed data from various exchanges for real-time validation.
- Performed timing analysis and optimizations to reduce compute time by **~10x** with multiprocessing and asynchronous RESTful API calls.
- Could parse **400+** trading pairs across exchanges within **2 sec** and is extendable to most large-cap exchanges.

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 using advanced Deep Learning vision and NLP models.
- Created 1stDayKit, a ML toolkit that consolidating **12 state-of-the-art models** into one easy to use package. Written with **Python** and **PyTorch**.

Honors & Awards

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*