



# Lee Yat Shun, Jasper

Eligible holder of Open Work Permit

Available immediately after 10<sup>th</sup> August, 2023

A highly self-motivated, skilled individual who has been working for more than two years in AI research. I enjoy working with others to achieve a common goal and to a very high standard.

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## EDUCATION

### Master of Science in Data Science

Hong Kong

City University of Hong Kong

2023

- CGPA: 3.83 (Distinction)
- Graduation Representative of Class 2023
- Student Member for the Programme Committee of Master of Science in Data Science

### Bachelor of Engineering (Honors) in Mechanical Engineering

Hong Kong

The Hong Kong Polytechnic University

2019

- Award: Faculty of Engineering Academic Scholarship for Outstanding HKDSE Admittees
- Executive Committee, the Mechanical Engineering Students' Society (MESS)

## WORKING EXPERIENCE

### AI Researcher

Hong Kong

The Aviation Services Research Centre, the Hong Kong Polytechnic University 02/2021 – 06/2023

- Led the development of computer vision software utilizing deep learning libraries, PyTorch and Tensorflow, to create a computer vision product for industrial maintenance and robotic automation process.
- Researched the potential of utilizing state-of-the-art reinforcement learning algorithms to minimize the blade imbalancing problem.
- Conducted statistical analysis for Boeing to reduce machining distortion and improve machining quality.
- Collaborated with cross-functional teams at a multinational corporation to develop, test, and deploy a software application.

### Audiovisual Engineer

Hong Kong

Shen Milsom & Wilke LLC

11/2019 – 02/2021

- Developed conceptual and detailed designs for audiovisual systems to provide solutions for clients.
- Created comprehensive specifications, budgets, and product recommendations for clients based on their needs and budgets.

## PERSONAL PROJECTS

### Quantitative Risk Analysis Dashboard

03/2023 - 04/2023

- Developed custom Python libraries to estimate Value-at-Risk (VaR) using CAViaR by Engle and Manganelli 2004 and to backtest VaR estimates using statistical tests from scratch.
- Constructed a user-friendly dashboard that can easily visualize the VaR forecast and the past estimates.
- Demonstrated strong analytical and problem-solving skills by applying advanced statistical techniques to estimate VaR and conducting extensive backtesting of VaR estimates using statistical tests.

### Predicting Stock Market Return

01/2022 - 05/2022

- Developed and implemented a market timing strategy that leveraged a broad set of predictors to predict monthly market returns and adjust positions in the SPY ETF accordingly, resulting in an annualized Sharpe ratio of 0.66 and outperformance of a buy-and-hold strategy.
- Conducted rigorous backtesting of forecasting models, and demonstrated the economic significance of a model with low but positive R-squared value by converting it into a profitable trading strategy.

## Building a Gaming AI by Deep Q Learning

03/2022 - 04/2022

- Trained a gaming AI to play QWOP which was awarded the best presentation performance in class.
- Contributed mainly on building the environment and developing the deep Q learning algorithms by using libraries including OpenAI Gym, PyTorch and Stable Baselines3

## Movie Library Website with Recommendation Engine

10/2021 - 11/2021

- Developed a recommendation engine using collaborative filtering and machine learning to personalize user movie recommendations based on their rating history.
- Built a web scraper to collect movie data from IMDB website and integrated it into the website to provide users with relevant and up-to-date information.
- Optimized the database design process by normalizing the schema to improve query performance and reduce redundancy, and provided guidance to team members in planning and executing the project from scratch.

## Car Park Availability Analysis & Predictive Modelling

06/2021 - 07/2021

- Utilized open data to predict the availability of adjacent parking spots across all car parks in Hong Kong
- Placed among top 10% in the DTT Programme organized by HKSTP Innoacademy

## CERTIFICATES

University Research Facility in Big Data Analysis (UBDA) Training Course	06/2022
HKSTP InnoAcademy's DeepTech Talents Training (DTT) Programme	06/2021
CS50x (Harvard University) Certificate	12/2020

## TECHNICAL SKILLS

- Data Manipulation (Python): *Numpy, Pandas*
- Statistics and Optimization (Python): *Scipy, Statsmodels, CVXPY*
- Computer Vision (Python): *OpenCV, Scikit-Image, Image Augmentation, PaddleOCR*
- Machine Learning and Deep Learning (Python): *Statsmodels, Scikit-Learn, Tensorflow, PyTorch*
- Database Server and ETL Process (SQL and Python): *SQL Server, MongoDB, GridFS*
- Data Visualization and Analysis (Python): *Matplotlib, Seaborn, Streamlit, Plotly*
- Web Development and API: *HTML, CSS, Javascript, Python: Django, Flask, Websocket*
- Others: *Windows OS, Linux OS, Docker, Bloomberg Terminal, Tableau, Matlab*

## LANGUAGES

Cantonese	●	●	●	●	●
Native					
English	●	●	●	●	○
Full professional proficiency					
Mandarin	●	●	●	○	○
Professional working proficiency					

## INTERESTS

- Writing Tech-related blogs on Medium.
- Contributing to open source libraries and resources.
- Basketball, Thai-boxing, dancing, and water sports.