HSIANG YAO

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EDUCATION EXPERIENCE

THE UNIVERSITY OF HONG KONG (QS21)   **HONG KONG**
Master of Finance (Financial Engineering)   *Aug. 2022 – May 2023*

FUDAN UNIVERSITY (QS34)   **SHANGHAI**
Bachelor of Economics (Mathematical Economics)   *Sept. 2018 – June 2022*
- **GPA:** 3.49/4.0
- **Courses:** Python Programming (4.0), Mathematical Analysis (4.0), Differential Equation (4.0), Linear Algebra, Probability and Mathematical Statistics, Approach to Time Series Analysis, Operations Research

STANFORD UNIVERSITY   **ONLINE**
Summer Workshops (Fundamentals of Data Science)   *Aug. 2022*
- **Courses:** Mathematical Optimization, Intro to Machine Learning, Intro to Deep Learning, Intermediate Topics in Machine Learning and Deep Learning, Deep Learning for NLP, Intro to High Performance Computing

COURSERA CERTIFICATES   **ONLINE**
- **Courses:** Discrete Mathematics Generality, Computer Organization, Operating Systems, Data Structures, Algorithmic Toolbox, C for Everyone: Programming Fundamentals, HTML, CSS, and Javascript for Web Developers

PROFESSIONAL EXPERIENCES

UNIVERSITY OF HONG KONG   **HONG KONG, SHEN ZHEN**
Full-time Research Assistant at Artificial Intelligence Institute (Applied Machine Learning)   *Apr. 2023 – Now*
- Modelled Ukrainian refugee movement after the Russia-Ukraine war. Preprocessed massive location time series data and the war severity dataset. Applied neural network to predict the trajectory and achieves an accuracy of 80% on unseen war situations. Further explored modelling the movement pattern using max entropy inverse RL method. (See the visualization)
- Worked on toy RL problems, including solving humanoid standup using TRPO, cartpole and mountcar using PG and Q-learning.
- Developed chatbots capable of conducting conversations of various relationships, e.g., lovers, enemies, through finetuning.
- Worked on unsupervised learning on image datasets. Applied various models like ResNet, VGG, VAE , etc. to extract low dimensional features of the images. Successfully categorized the data into six types according to their semantic meanings.
- Designed and trained a CNN on coauthorship dataset, further worked on the explainability of CNN using Grad-CAM.
- Trained a Graph Neural Network for link prediction on coauthorship dataset, ultimately achieving an AUC score of 90%.

OTHER EXPERIENCE

TALKVERSE (AI LANGUAGE LEARNING STARTUP)   **SHANGHAI**
Co-founder (No longer participating in company matters)   *2023*
- Our first product is now available on Wechat. (more info)
- Responsible for backend development, including building the core logic, designing and implementing the system architecture, database designing, conducting high-concurrency tests, etc.
- Undertook part of the responsibilities of a Product Manager, guiding the product from idea to launch. Conducted user research to understand user needs. Utilized user research insights to determine the product prototype.

DIY DRONE   **WORK FROM HOME**
- Experimented with all necessary electronics, e.g., the receiver, the BLDC motor, Arduino nano, etc. Running the whole system successfully on a breadboard. Designed the schematics and PCB using KICAD.
- Designed the frame and parts of the drone using FreeCAD. Printed the parts using 3D printer.
- Putting together all the parts and fintuning the control algorithm. (currently in progress)

PYTHON FREELANCE DEVELOPER   **WORK FROM HOME**
Part-time.   *Aug. 2022 – Mar. 2023*
Developed numerous software for different scenarios.
- Developed email marketing software that automates the tedious daily work of a salesperson. The software successfully addresses the pain point of my customer and still generates subscription fee for me monthly.
- Other software: pitch identification software for Guzheng, DNA sequence processing scripts, etc.

SKILLS & INTERESTS

- Technical: Python, Pytorch, Flask, Linux, Redis, MySQL, Nginx, Docker, C, Java, KiCAD, FreeCAD, Arduino
- Language: Native in Mandarin, Fluent in English (TOEFL-112), Rudimentary in Cantonese
- Interests: Artifical Intelligence, Robotics, Sports, Travelling