

# SHUBHANKAR AGRAWAL

## DATA SCIENTIST

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Tanjong Pagar, Singapore

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## EXPERIENCE

### OCBC, Singapore

*Data Scientist, Corporate and Consumer Banking*

Jan 2023 - Present

- Developed classification models for user personalization, driving credit and treasury product adoption generating a 3x uplift across marketing campaigns and an increase of \$2 million in annual revenue.
- Incorporated LLMs across solutions: a customer feedback scorer to identify pertinent use cases, and a RAG based text summarization model to provide investment advice across financial products.
- Led a team to develop a standardized ML framework, accelerating model deployment timelines by 50%, integrating various big data and modelling libraries across the Python data science stack.

### JP Morgan Chase, Hong Kong

*Software Engineer, Global Private Bank | Ignite ML Community Lead – APAC 2021*

Aug 2020 – Dec 2021

- Delivered new features and enhancements as a server-side developer on a suite of advisor CRM apps, working with asynchronous (Reactive) Java, SpringBoot, Kafka and the Elastic stack in agile sprints.
- Streamlined support diagnosis and reconciliation by introducing an NLP solution to auto-reconcile data discrepancies significantly reducing manual intervention and saving 10 hours weekly.
- Created a CTF challenge as part of global graduate onboarding for firmwide cloud and data platforms.

*Data Science Summer Analyst, Asset Management*

Jun 2019 – Aug 2019

- Improved digital marketing with fund flow projections applying time series forecasting models.
- Boosted global application uptime by 20%, building a classification-based instance autoscaling system for services deployed across AWS cloud platforms.

### CryptAM Funds, Hong Kong

*Part Time Quantitative Developer*

Feb 2018 – Jun 2018

- Researched and introduced mathematical models for cryptocurrency price evaluation in trade analysis.
- Automated the daily pipeline for portfolio allocation with R and VBA, expediting runtime by 70%.

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## EDUCATION

### Masters of Computing (Artificial Intelligence)

*National University of Singapore, Singapore*

Jan 2022 – Jan 2023

CAP: 4.65 / 5.00

Honours: Postgraduate AI Scholarship

### Bachelors of Engineering (Major: Computer Science | Minors: Finance, French)

*University of Hong Kong, Hong Kong*

Sep 2016 - Jun 2020

CGPA: 3.72 / 4.30

Honours: Dean's Honour List, HKU Foundation Scholarship, HKSAR Reaching Out Award

Teaching Assistant: Programming Technologies and Tools, Computing Programming I

Semester Exchange: Nanyang Technological University, Singapore.

Overseas Language Immersion Course: Lyon Catholic University, France [Legion D'Honneur Award]

### Higher Secondary Certificate

*A.M.M Matriculation Higher Secondary School, Chennai, India*

May 2016

Score: 98.4 %

Honours: Best Outgoing Student 2016 | Student Council Executive 2015-2016 | School Editorial Board 2015

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## PROJECTS

### Q-Wordle

[https://github.com/astronights/q\\_wordle](https://github.com/astronights/q_wordle)

Designed and implemented a reinforcement learning agent to play the game of Wordle.

Achieved a learning behaviour mimicking humans, with a success rate of 80% over 20000 trials.

### Optimizing One Pixel Black Box Attacks

<https://arxiv.org/pdf/2205.02116.pdf>

Performed research to optimize the generation of adversarial images targeting state-of-the-art DNNs.

Reduced the average number of network calls combining simulated annealing and StrAttack.

### Gadong (FOSS Asia Open Science Prize 2019)

<https://devpost.com/software/fossasia>

Ideated and created a web application providing a crowdsourced dictionary for indigenous languages.

Utilized the MERN stack to develop, augmenting semantics with phonetic and visual elements.

### A4 Paper Trading

[https://github.com/astronights/A4\\_Paper\\_Trading](https://github.com/astronights/A4_Paper_Trading)

Developed an automated bot with a self-learning multi-agent strategy to manage a BTC portfolio.

Leveraged technical and fundamental indicators as agents to ensure optimal trading decisions.

### Final Year Project: Financial Data Forecaster

<https://i.cs.hku.hk/fyp/2019/fyp19020/>

Built a forecaster predicting cross-domain index and forex price movement across 17 APAC countries.

Enhanced accuracy with 10-year historical prices and sentiment of geopolitical tags on social media.

### Flow Monster (JPMC Hackathon Runner Up)

Developed trading strategies for optimal RFQ price matching and trading on the dealer market.

Engineered algorithms to adjust orders prioritizing risk, PnL, activity, and generating post trade reports.

## TECHNOLOGY SKILLS

### ◆ Data Science

- Machine Learning
- Statistical (A/B) Testing
- Natural Language Processing
- Distributed Processing (Spark)
- Deep Learning (PyTorch)

### ◆ Programming Languages

- Python
- R
- Javascript (Typescript)
- Java

### ◆ Databases

- SQL
- Hadoop
- MongoDB
- Elasticsearch

## LANGUAGES

- ◆ English
- ◆ Hindi
- ◆ French
- ◆ Tamil

## EXTRA-CURRICULARS

### Blue Sky Sustainability Engineer Lead

UNIVERSITY OF HONG KONG

### Tianjin Interflow Program (Arduino Robotics)

TIANJIN UNIVERSITY

### Dreamcatchers

### Entrepreneurship Academy

UNIVERSITY OF HONG KONG

### Leadership Development Program

OSCAR M LOPEZ CENTER, MANILA

## VOLUNTEER EXPERIENCE

### Graduate Mentorship Program

NATIONAL UNIVERSITY OF SINGAPORE

### Residential College Organic Farming

UNIVERSITY OF HONG KONG

### Force for Good – Branches of Hope

JP MORGAN CHASE

### Domestic Workers Empowerment Program

UNIVERSITY OF HONG KONG

## HOBBIES & INTERESTS

- ◆ Puzzles and Trivia
- ◆ Linguistics
- ◆ Art History
- ◆ Chess and Badminton
- ◆ Ukulele

## TEST SCORES

GRE: 331/340 (Writing: 5.5 / 6.0)