

# SHUBHANKAR AGRAWAL

## DATA SCIENTIST

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Tanjong Pagar, Singapore

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## EXPERIENCE

### OCBC, Singapore

*Data Scientist, Corporate and Commercial Banking*

Jan 2023 - Present

- Transforming SG Point of Sale transactions with AI, advancing customer acquisition across segments.
- Developed propensity-based models driving credit and treasury product adoption with a 3x uplift across marketing campaigns and an average increase of \$2 million in annual revenue.
- Enhanced customer retention using LLMs to score surveys and identify pertinent product use cases.
- Led a team to develop a standardized ML framework optimizing the AI Lab data and model pipelines.

*Data Science Intern, Compliance*

May 2022 – Jul 2022

- Improved risk assessment by building a Proof-of-Concept model to quantify risk in customer networks.
- Optimised and back tested an in-house fraud detection model achieving a 5% performance increase.

### JP Morgan Chase, Hong Kong

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

Aug 2020 – Dec 2021

- Delivered new features and enhancements as a server-side developer on a suite of investor CRM apps.
- Streamlined support diagnosis and reconciliation creating an NLP solution, saving 10 hours per week.
- Created a CTF challenge as part of global graduate onboarding to firmwide cloud and data platforms.

*Data Science Summer Analyst, Asset Management*

Jun 2019 – Aug 2019

- Applied time series statistical methods to forecast fund flow enabling projections for digital marketing.
- Boosted global application uptime by 20%, building a classification-based instance autoscaling system.

### CryptAM Funds, Hong Kong

*Part Time Quantitative Developer*

Feb 2018 – Jun 2018

- Explored and implemented mathematical models for cryptocurrency price evaluation in trade analysis.
- Automated the daily pipeline to update portfolio allocation, expediting the process 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: OCBC AI Scholarship

### Bachelors of Engineering [Major: Computer Science | Minor: 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 learn to play the game of Wordle. Achieved a learning behaviour mimicking human, 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 that predicts cross-domain index and forex price movement across 17 APAC countries. Enhanced accuracy with 10-year historical prices and sentiment of geo-political 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 Analysis
  - Natural Language Processing
  - Distributed (Spark)
  - Deep Learning (PyTorch)
- ◆ **Programming Languages**
  - Python
  - R
  - Typescript
  - Java
- ◆ **Database**
  - 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

- ◆ Trivia and quizzing
- ◆ Linguistics
- ◆ Art History
- ◆ Chess and badminton
- ◆ Ukulele

## TEST SCORES

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