

# Shubhankar Agrawal

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## Experience

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**Machine Learning Engineer**, Overseas Chinese Banking Corporation (OCBC) – Singapore Jan 2023 – Present

- Developed recommendation models for real-time user personalization, driving conversion rates of credit and treasury products, with a 3x uplift across marketing campaigns and \$2 million revenue increase across customer segments.
- Incorporated Large Language Models to optimize investment advice through a RAG-based text summarization project analysing over 2000 research documents across financial instruments.
- Enhanced customer satisfaction scores by 30% building a customer feedback scorer to identify critical concerns.
- Led a team to develop a standardized ML framework for the AI Lab, accelerating model deployment timelines by 50%, integrating big data and modelling libraries across the Python data science stack.

**Software Engineer**, JP Morgan Chase – Hong Kong 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 saving 10 hours of manual intervention weekly.
- Led ML hackathons and technical sharing sessions as the Ignite APAC ML Community Lead 2021.
- Created a Capture the Flag challenge as part of onboarding for 100+ graduates to firmwide cloud and data platforms.

**Data Science Summer Analyst**, JP Morgan Chase – Hong Kong 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.

**Quantitative Developer**, CryptAM Funds – Hong Kong 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 daily runtime by 70%.

## Projects

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**Optimizing One Pixel Black Box Attacks** [arxiv.org/pdf/2205.02116.pdf](https://arxiv.org/pdf/2205.02116.pdf)

- Performed research and optimized adversarial image generation reducing network calls on state-of-the-art DNNs.

**Cryptle** [daily-cryptic-iief.vercel.app](https://daily-cryptic-iief.vercel.app)

- Developed a daily crossword clue puzzle (Wordle inspired) using the MERN stack + Typescript to enhance web skills.

**Gadong [Winner – FOSS Asia x UNESCO Hackathon]** [devpost.com/software/fossasia](https://devpost.com/software/fossasia)

- Ideated and created a crowdsourced dictionary for indigenous languages to promote preservation and accessibility.

## Education

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**National University of Singapore** – Master of Computing (Artificial Intelligence) Jan 2022 - Jan 2023

GPA: 4.65 / 5.00

**University of Hong Kong** – Bachelor of Engineering (Computer Science) Sep 2016 - Jun 2020

GPA: 3.72 / 4.30 [First Class Honours, Dean's Honour List]

Minors: Finance, French

## Skills

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**Data Science:** Machine Learning, Time Series Analysis, Natural Language Processing, Deep Learning - PyTorch, AB Testing

**Big Data:** Spark, Hive, Hadoop, SQL, MongoDB, Elasticsearch, Kafka, Numpy, Pandas, Polars, PowerBI

**Programming Languages:** Python, R, Typescript/Javascript, Java

**Languages:** English, Hindi, French, Tamil