

# Hao Zhou

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## Education

**University of Edinburgh** 2022.09-2023.06

**Master (Hons) in Informatics**

Core Modules: Machine Learning Practical, Advanced Database system, Accelerated Natural Language Processing.

**University of Edinburgh**

2018.09-2022.06

**BSc (Hons) in Artificial Intelligence and Computer Science**

**GPA: 3.2/4.0 (Top 10%)**

Core Modules: Computer Communications and Networks, Natural Language Processing, Applied Machine Learning.

## Professional Experience

**Data Analysis Intern | JingDong(JD.COM), Beijing, China**

2021.04-2021.09

- Organized and optimized the internal requirements of the company, analyzed the user profile, and explored the attractive selling points of the new products to increase sales.
- Collaborated with PM, programmer, and regional shop managers to promote the project, and evaluated the input/output ratio, exposure volume and project GMV.
- Assisted regional shop managers to promote 5 new offline shops, covering 4 official JD fresh food TVCs published and 5 original essays generated, attracting 50+ internet KOLs. Among them, TVC "Guangdong Lychee" was broadcasted over 10 million times on online platforms with over 150 million exposures volume, increasing 50% in total compared to previous year.

**Modelling and Software Engineer Intern | HuaTai Securities (HTSC), Shenzhen, China**

2020.06-2020.11

- Selected stocks based on Convolutional Neural Network (CNN) model, tested and forecasted in a full Chinese A-share stock pool to evaluate model performance.
- Extracted features and reduced all the features into two-dimensional form, trained the model via training set and testing set. Tested model after cross-validation and tuning.
- Built the CNN model with an annualised excessive return of approximately 15% and a maximum retracement of 7%, better than the Naive Bayes Model and linear regression models. Drew the conclusion that the strategy of adopting AI algorithms used to construct the stock selection, as a summary of historical experience, might fail for data which was only retrospective and not predictive.

## Project Experience

**Natural Language Processing**

2022.03-2022.07

**Developed and applied the NLP model based on NLTK dataset**

- Developed and applied the Hidden Markov Model, the Naïve Bayes classifier and logic regression, using the Hidden Markov Model and Lidstone-smoothing to smooth the probability, trained the model.
- Improved the accuracy rate of feature classification to 84.35%, growing by 10.3% and that of Standard sequence model to 89.45%, growing by 12.4%.

**Movie Recommendation System**

2021.09-2021.12

**Predicted the ratings of unwatched movies and users' favorite movies based on data**

- Cleaned the data, extracted features, and used collaborative filtering. Reduced dimensionality of data and solved data sparsity problem through PCA and normalization. Analyzed and predicted via CNN model.
- Improved accuracy of the predicted scores to 85%, increasing by 10%.

**Drone Flight Path (Dynamic Programming)**

**Formulated the map of best flight path with Gjson**

2021.03-2021.07

- Found the best flight path based on the positions of drone and air detection points, to ensure that all the detection points are visited and return to starting point in the shortest number of steps.
- Formulated a drone route map via Gjson and used algorithm: A\* algorithm, greedy algorithm, Genetic Algorithm, Ant colony optimization algorithm.
- Succeed in that all the drones could read all the air detections points and return back to the starting point before the power exhausted, increasing the drone efficiency by 25%.

## Skills

**Programming Languages:** Java(intermediate), Python(intermediate), SQL (intermediate), comfortable with Matlab.

**Frameworks:** Pytorch(intermediate), Bootstraps(intermediate), Django(intermediate), Spring(familiar).

**Languages:** English(fluent), Mandarin(native)

## Summary

A dedicated young professional in data analysis and modeling for my academic background in AI and CS as well as professional experience gained from JingDong and HTSC. Strong logic-thinking and decision-making, adaptable and flexible, adept in project planning and execution with proficiency in Java, Python, Pytorch and SQL.