

# BINGSEN (BALE) CHEN

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## EDUCATION

**New York University Shanghai**, Shanghai, China

Expected graduation date: 05/2024

**New York University (Study Away Program)**, New York, United States

01/2023 – Present

**Major:** Data Science (Artificial Intelligence track) **Minor:** Mathematics

Cumulative GPA: 3.95/4.00

**Honors:** Dean's List 2020-2021 & 2021-2022, Global Elite Scholarship (\$19500 awarded for top 6% incoming freshman)

## RESEARCH & PROJECT EXPERIENCE

**Detecting AI-generated Text in a Black-box Setting: An Improvement on DetectGPT**

(On-going)

*Course Project in DS-GA 1012 Natural Language Understanding* | Instructor: Sophie Hao

Spring 2023

- Proposed a zero-shot ensemble method that requires lower computational cost to detect AI-generated text based on an existing framework DetectGPT

**Spatial Equity Analysis of Public Electric Vehicle Charging Stations: A Case Study of Shanghai**

[Report](#) | [GitHub](#)

*Research Associate*, Key Lab of Urban Design and Science, Shanghai, China | Advisor: Chenghe Guan

03/2022 – 12/2022

- Proposed an equity analysis framework that consists of an improved gravity model of accessibility and regression analysis (linear and geographically weighted regression) using Python and GIS
- Collected the EV charging station, demographic, socioeconomic, and POI data using Python web-scraping and AMap API
- Designed an algorithm for pixel-level accessibility measurement based on the improved gravity model using Python and AMap API, which reduces computational time by over 100x

**Qualitative and Quantitative Analysis of Configuring SAC Algorithm with REDQ and Reset Mechanism**

[GitHub](#)

*Course Project in CSCI-SHU 375 Reinforcement Learning* | Instructor: Prof. Keith Ross

Fall 2022

- Analyzed the configurations of Randomized Ensembled Double-Q (REDQ) Learning, Reset Mechanism, and hyperparameter tuning in the Soft-Actor Critics algorithm in deep reinforcement learning
- Presented the paper "The Primacy Bias in Deep Reinforcement Learning" by Nikishin et al. and its Reset Mechanism

**Trash or Treasure: How to Utilize Emojis in Social Media Sentiment Classification**

[Blog](#) | [Report](#) | [GitHub](#)

*Undergraduate Student Researcher*, NYU Shanghai, Shanghai, China | Advisor: Prof. Mathieu Lauriere

05/2022 – 01/2023

- Experimented the emoji-compatibility of pretrained BERT-based encoders and how emojis can be incorporated into sentiment analysis to improve accuracy
- Proposed 5 innovative data preprocessing method for emojis that robustly boosts sentiment analysis accuracy by 1.2%
- Published a blog post on Towards Data Science medium account and won the Best Project in STEM and Media in the Fall 2022 Undergraduate Research Symposium

**Multi-species Classification for Dolphin and Whales: A Deep Learning Approach**

[GitHub](#)

*Course Project in CSCI-SHU 360 Machine Learning* | Instructor: Prof. Mathieu Lauriere

Spring 2022

- Experimented a deep learning approach to classify dolphin and whale species using both traditional machine learning models and the currently trending deep learning models
- Compared and experimented transfer learning on multiple pretrained neural networks and discussed potential domain shift problems that caused the learning to fail

**An Optimization of Shanghai's Lockdown Policy: Economy, Mental Health, and Severe Cases Considered**

[GitHub](#)

*Course Project in DATS-SHU 240 Intro to Optimization and Math Programming* | Instructor: Prof. Zhibin Chen

Spring 2022

- Proposed a mathematical model that builds upon the SEIR model to simulate the COVID outbreak in Shanghai 2022, with economics, public mental health, and severe cases considered
- Optimized Shanghai 2022 lockdown policy with Genetic Algorithm and conducted sensitivity analysis to understand optimization results

## PROFESSIONAL EXPERIENCE

**Shanghai Key Lab of Urban Design and Urban Science**, Shanghai, China

[Webpage](#)

*Research Associate*

05/2022 – Present

- Led a lab research project on spatial equity analysis on public EV charging stations in Shanghai with Dr. Jialin Liu
- Assisted in a water quality remote sensing project by developing a CNN model and processing sensed image data
- Participated in bi-weekly lab meetings to present recent research progress and help other members with data modeling tasks

**New York University Shanghai**, Shanghai, China

*Resident Assistant*

09/2021 – 12/2022

- Managed residential hall 2 floors of 40 ethnically diverse residents by designing bi-weekly events, conducting 1-1 conferences, and enforcing residential policies.
- Troubleshot emergencies regarding students' physical and mental health, interpersonal conflicts, and facilities issues.
- Cooperated with a team of 6 supervisors and 30 resident assistants to conduct special projects including new recruits training, school-wide programs, and recruitment.

#### **NYU Shanghai Center for Career Development, Shanghai, China**

*Student Worker Leader & Senior Student Worker*

09/2021 – 05/2022

- Managed and coordinated a team of 17 to facilitate events and develop career-related resources.
- Executed a video making project with a team of 3, mainly producing a series of short videos for service introduction and event promotion, and organizing video-making workshops for colleagues.
- Organized and arranged recruitment process of new junior student workers, selecting 8 from 100+ candidates.

#### **Pingan Bank, Shanghai, China**

*Data Analyst Intern*

06/2021 – 08/2021

- Retrieved and manipulated billions of data daily with HiveQL to support 6 business decisions on a plugin display system.
- Developed 16 auto-updating visualized reports on a Tableau-like platform for mid-year reports and daily monitor.
- Executed an automation project individually on tabulating and error-detecting process of the department's capacity report with Python, thus speeding up the workflow by 7 times and improved accuracy by 42%.
- Maintained 84 tables in a database by monitoring daily data updates, altering fields based on business requirements, and managing storage usage.

### **SELECTED COURSES (WITH GRADES)**

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| • Natural Language Understanding and Computational Semantics (Graduate Level; In progress) | • Special Topics in Data Science: Modern Topics in Statistical Learning Theory (Graduate Level; In progress) |
| • Advanced Python for Data Science (Graduate Level; In progress)                           | • Mathematical Statistics (A)  |
| • Reinforcement Learning (A)   | • Intro to Optimization and Mathematical Programming (A)   |
| • Machine Learning (A)   | • Computational Urban Science and Big Data (A)   |

### **EXTRACURRICULAR ACTIVITIES**

**Technical Writer**, Towards Data Science Medium Publication

[Webpage](#) | 01/2023 – Present

- Published articles about my project experiences or frontier research directions occasionally

**1<sup>st</sup> Place in Hack the Pearl 2022 Data Modeling Track**, NYU Shanghai

[GitHub](#) | 04/2022

- Implemented and tuned multiple machine learning models to predict 4 kinds of diseases based on patients' personal data within a 48-hour time window

**Emcee**, I AM LIMITLESS Conference 2022, NYU Shanghai

05/2022

- Hosted and coordinated the opening of the annual career development conference with 4 distinguished guests and moderated an alumni dialogue session

**Bass Singer**, Elite A Cappella Choir, NYU Shanghai

05/2021 – 01/2022

- Performed around 40 pieces of both popular and classical A Cappella arrangements in 8 pop-up shows and 5 concerts

**National Top 8 in L'Oréal Brandstorm Competition**, L'Oréal China

01/2021 – 04/2021

- Collaborated with a team of 3 in designing an entertaining shopping experience for Atelier Cologne and making 3 business pitches

### **HONORS & SCHOLARSHIPS**

**Dean's Undergraduate Research Fund**, NYU Shanghai

05/2022

**Recognition Award for Academic Year 2021-2022**, NYU Shanghai (87 recipients in the whole school)

07/2022

**Recognition Award for Academic Year 2020-2021**, NYU Shanghai (50 recipients in the whole school)

07/2021

### **SKILLS**

**Artificial Intelligence:** High proficiency in PyTorch and Hugging Face framework

**Data Science:** Python (NumPy, Scikit-learn, Pandas, Matplotlib, etc.), SQL

**Other Technical Skills:** Working with HPC, LaTeX, ArcGIS/QGIS, Stata, Arduino UNO, Processing

**Language:** Mandarin(Native), English(Professional Work Proficiency)