

# Boyuan Zhang

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## Education

**New York University, College of Arts and Sciences**, New York, NY Jan. 2021 – Dec. 2023(exp.)

Bachelor of Arts, Computer and Data Science

- Minor in Mathematics and Business Studies
- Major GPA: 3.88 / 4; Cumulative GPA: 3.78 / 4
- *Honor: Dean's List (Academic year 2021-22)*

**New York University, School of Professional Studies**, New York, NY Jan. 2022 – Dec. 2023(exp.)

Certificate in Sports Analytics

**The Experimental High School Attached to BNU**, Beijing, China Sep. 2017 – June 2020

- *Honor: Golden-Ship Award (Top 1%)*

**Syracuse University, Falk College of Sport and Human Dynamics**, Syracuse, NY July 2019

Berlin Sports Analytics Academy

## Academic Interest

Statistical Data Science, Statistical Inference, Machine Learning, Deep Learning, Sports Analytics

## Research Experience

**Carnegie Mellon University, Department of Statistics and Data Science**, Pittsburgh, PA

Summer Undergraduate Research Experience in Statistics June 2022 – July 2022

- Research Area: Data Science in Sports Analytics
- Advisors: Dr. Ronald Yurko, Dr. Konstantinos Pelechrinis

**Peking University, School of Electronics Engineering and Computer Science**, Beijing, China

Science Talent Program Mar. 2018 – Dec. 2018

- Research Areas: IoT, Embedded Systems, Computer Electronics and Information Technology
- Advisor: Prof. Yanjun Yang

## Projects

**Fingertips Position Estimation of a Robot Hand** (Python) Fall 2022

- Trained a Convolutional Neural Network which takes the RGBD images of the robotic hand from three different views as input and returns the positions of each fingertip

**Lip Reading Word Classification** (Python) Fall 2022

- Built Convolutional Neural Network and Long Short Term Memory model that takes a sequence of preprocessed video frames of the speaker as input and identifies the speaker's words

**Regularized Adjusted Expected Goal Plus-Minus Model for Soccer** (R, Python) Summer 2022

- Developed a new RAPM model for evaluating player's performance and contribution in soccer, which incorporates pre-trained priors using box-score data to predict expected goals differential

## **University Course Registration System (Java)**

Fall 2021

- Designed functions such as add, edit, delete courses and students list by utilizing skills in OOP
- Created different interfaces for students and admins to login and execute functions

## **Admission of Highly Selected Public High Schools in NYC (Python)**

Spring 2021

- Cleaned characteristics data such as class size and per-student spending of 594 middle schools
- Explored the correlation between these factors and admission to high schools

## **Difference in Players' Performance Between NBA and EuroLeague (Tableau, R)**

Summer 2019

- Collected performance data of 100+ players who have played in both leagues
- Analyzed shot percentage, points, assists, and rebounds; visualized data in Tableau dashboard

## **Personalized Intelligence Mailbox Based on IoT (Android Studio, Arduino)**

2018

- Assembled the cabinet and utilized Arduino to manage modules and functions on the mailbox
- Developed mobile app in Android Studio to control the mailbox remotely via Gizwits Cloud

## **Talks**

### **Carnegie Mellon Sports Analytics Conference, Pittsburgh, PA**

Oct. 2022

A Regularized Adjusted Plus-Minus Model in Soccer with Box Score Prior

### **Carnegie Mellon Sports Analytics Camp, Pittsburgh, PA**

Aug. 2022

A RAPM Model for Soccer Player Ratings (with Edvin Tran Hoac and Phong Hoang)

### **Science Talent Program Computer Science Forum, Sichuan, China**

Nov. 2018

Personalized Intelligence Mailbox Based on IoT

## **Publication**

- **Work in Progress**

“A Regularized Adjusted Expected Goal Plus-Minus Model for Soccer”

## **Teaching Experience**

### **New York University, Courant Institute of Mathematical Science, New York, NY**

*Tutor:* CSCI-UA 0002 Introduction to Computer Programming

Fall 2022

- In-class tutoring: section 6 for Prof. David Prager and section 10 for Prof. Khye Borg Liew
- Held drop-in tutoring sessions every week; helped 350+ students over the entire semester

### **The Experimental High School Attached to Beijing Normal University, Beijing, China**

*Instructor:* Orienteering

Fall 2019 – Fall 2020

- An elective course for grades 7-10 students focusing on map reading, terrain, compass, basic orienteering skill, and basic cartography, with field practice
- Developed course curriculum and material; managed classes with 20+ students each semester

## **Other Experience**

### **Learnjoy Sports, Beijing, China**

Sep. 2020 – Dec. 2020

*Events Management and Operation Intern*

- Managed equipment, volunteers, and assisted events manager during events and competitions
- Designed events plan and completed events summary by analyzing related data information

## Services

*Academic Tutor, NYU Teaches*

Oct. 2021 – Present

*Captain, ESBNU Orienteering Varsity*

Sep. 2017 – June 2020

*Director of Sports Department, ESBNU Student Council*

Nov. 2017 – Nov. 2019

## Awards

Honorable Distinction in the Computational and Algorithmic Thinking Competition	2019
Second Prize in Beijing Adolescents Science and Technology Innovation Contest	2019
Honorable Mention in High School Mathematical Contest in Modeling	2018
Second Prize in the National Olympiad of Informatics in Provinces	2018

## Skills

**Coding:** Python: TensorFlow, PyTorch, sklearn, scipy, statsmodels, Pandas, Numpy, Matplotlib, seaborn  
R(tidyverse, ggplot, caret, glmnet), SQL, Java, C/C++, MATLAB

**Technical:** Git, Markdown, LaTeX

**Tools:** Tableau, MongoDB, Android Studio, Arduino, OCAD, Excel, PowerPoint, Word

## Relevant Courseworks

- **Data Science and Computer Science:**  
Advanced Machine Learning and Deep Learning, Data Management and Analysis,  
Intro to Machine Learning, Artificial Intelligence and Machine Learning, Basic Algorithms,  
Computer Systems Organization, Data Structures, Intro to Data Science
- **Mathematics and Statistics:**  
Probability and Statistics, Regression and Forecasting Model, Causal Inference,  
Multivariable and Vector Calculus, Linear Algebra, Discrete Mathematics
- **Others:**  
Foundations of Sports Analytics, Information Technology

## References

- **Dr. Ronald Yurko**  
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