

Patrick (Peiyuan) Ma

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Education

The University of North Carolina at Chapel Hill

08/2019-05/2022

B.S. in Computer Science, Statistics and Analytics & Minor in Mathematics

Chapel Hill, NC

- **Cumulative GPA:** 4.0/4.0
- **Related Coursework:** Statistical Machine Learning, Data Analysis, Algorithms, Data Structures, OOP and Design Patterns, Computer Organization, Linear Algebra, Discrete Math, Numerical Analysis, Probability, Differential Equations

Huazhong University of Science and Technology (HUST, 7th in China by 2019ARWU)

09/2017-07/2019

Mechatronics (transferred out)

Wuhan, China

- **Cumulative GPA:** 93/100 (3.98/4.00), **Ranking:** 2/242
- **Honors:** National Scholarship in China (2018), Straight-A Student at HUST (2018)

Skills

Technical Skills: Java, Python, R, MySQL, C/C++, Django, JavaScript, HTML, CSS, MATLAB, XML, Linux, Tableau

Languages: Chinese, English, Cantonese

Experience

Peer Tutor at UNC Learning Center

01/2020-Present

- Providing one-on-one help to drop-in students in OOP and Design Pattern, Discrete Math, and Introductory Statistics

Research on Properties of Carbon Nanotube | Research Assistant | Advisor: Prof. Li Li & Ming Xu

03/2018-02/2019

- Proposed a method for quantifying dispersion of CNTs and improved its running time from $O(n!)$ to $O(n^3)$ in **MATLAB**
- Fabricated 100+ carbon nanotube/epoxy composites and tested their mechanical properties by SEM, DMA
- Researched production and mechanical performance of novel materials (e.g. carbon nanotubes)
- Simulated the impact properties of novel composite materials (CNT@Ni foam) in **Abaqus**

Projects

Amazon Customer Reviews Analysis | The Interdisciplinary Contest in Modeling

03/2020

- Analyzed patterns of Amazon Customer Reviews in **R** and prepared a 19-page report with two teammates
- Contributed codes and analysis for sentiment analysis, PCA, EDA, visualization, and Ordinal LogitReg

My Blog | Personal Project

01/2020-02/2020

- Developed a blog web app for posting and commenting using **Django**, **Bootstrap4**, **CSS**, and **JavaScript**
- Developed interfaces for CRUD functions and user authentication system

Unsupervised Learning Analysis of TCGA Cancer Data

01/2020-02/2020

- Analyzed a cancer dataset with 2000+ gene expression in **R** using PCA, k-means, and hierarchical clustering
- Improved the accuracy of the cancer cluster to 94%+ and visualized the dataset in a more intuitive way

Keep My Professor Dry | COMP 401 Hackathon

11/2019

Best Hack for Water Gun Racing Game

- Used **Java** Swing to create a challenging water gun racing-like game by randomization and punishment for shooting mistakes
- Collaborated with 2 teammates using **Git** for version control

Simple Instagram Android Application | Personal Project

11/2019

- Developed an Instagram-like app in **Java** that supports user login, viewing and posting with photos using **Parse**
- Utilized Fragments and Bottom Navigation View to achieve navigation between posts, capture, and profile tabs

Leadership

Social Survey of Low-income Families | Team Leader | Xiaogan, China

06/2018-08/2018

- Used matplotlib library in **Python** to visualize and analyze the health insurance data of low-income families in Xiaogan City
- Contacted government officials, submitting relevant materials, writing reports about families with mentally ill patients
- Received reporting from four local media and won 1450+ hits on our official account's passages
- Won Excellent Social Practice Team of HUST (2018), Excellent Social Practice Individual of HUST (2018)