

## Nathaniel Wang

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### EDUCATION

Columbia University, New York, NY

Expected May 2023

B.A. Computer Science

GPA : 3.49

**Relevant Coursework:** Data Structures, Artificial Intelligence, Machine Learning, Databases, Natural Language Processing, Computational Linear Algebra, Advanced Programming, Computer Science Theory, Analysis of Algorithms, Intro. to Robotics

Northport High School, Northport, NY

May 2019

### SKILLS

**Programming Languages:** Python 3, Python 2, C, C++, Java, HTML, JavaScript, CSS, MATLAB, Bash, SQL, MongoDB, PHP

**Python Libraries:** Pandas, NumPy, SciPy, Scikit-learn, TensorFlow, Keras, Torch, CNTK, NLTK, Selenium, Flask, Beautiful Soup

**Software Suites:** Notion, Slack, Git, Adobe Creative Cloud suite, Microsoft Office, Google Workspace, DaVinci Resolve

**Software Skills:** Data transformation and analysis, full-stack development, machine learning, Agile development

### EXPERIENCE

**Columbia University, Teaching Assistant**, New York, NY

July – August 2022

- Assisted students in understanding concepts relating to natural language processing
- Graded exams and assignments using static and dynamic analysis

**Columbia University School of International and Public Affairs, Freelance Web Developer**, New York, NY

June – August 2022

- Worked with REST API provider to repair voter information website functionality
- Extended voter information website functionality to support early voting information using JavaScript, CSS, HTML, PHP

**Columbia University, Undergraduate Research Intern**, New York, NY

May – August 2022

- Used Python, Pandas, and Twitter/Reddit APIs to scrape tweets, comments, and user geolocation data
- Wrote sentiment analysis model to gauge NYC residents' opinion on subway safety
- Performed visual analysis of data to draw conclusions regarding the impact of the war in Ukraine on human mobility

**Columbia Business School, Technical Lab Assistant**, New York, NY

February – May 2022

- Designed and built a food product search engine to improve users' access to nutritional data
- Extracted, transformed, and loaded data from the FoodData Central database to an application-specific MongoDB database

**Network 1 Financial, Intern**, New York, NY

January – April 2022

- Prepared reports and presentations on promising investment targets
- Wrote a web scraper using Python and BeautifulSoup to automatically compile information on companies and executives

**Cold Spring Harbor Laboratory, Partners for the Future Research Intern**, Cold Spring Harbor

September 2018 – March 2019

- Built system to track and evaluate mouse behavior using embedded platforms, vision libraries, and Python
- Presented and communicated project findings at lab-wide conference

**Brookhaven National Laboratory, HSRP Research Intern**, Brookhaven, NY

July – August 2018

- Parsed and processed performance data of machine learning frameworks using Python, Keras, and TensorFlow
- Visualized data and presented findings at internship program-wide conference

**Cold Spring Harbor Laboratory DNA Learning Center, Intern**, Cold Spring Harbor, NY

June – September 2017

- Provided guidance to students and assisted teacher instruction during classroom lectures on genetics and genomics

### PROJECTS

**Nutritional Information Database, Lab Project**

February – March 2022

- Used MongoDB to extract, parse, and reformat USDA-sourced nutritional data into an application-specific database
- Writing a Python interface to connect search and recommendation engine logic to created MongoDB database

**Partial reimplement of "make" utility, Class Project**

July 2021

- Used C++17 to write a functioning clone of the "make" automation utility
- Implements features of the original functionality including building, linking, and phony commands

**Absorbing Markov Chain End-state Calculator, Independent Project**

October 2020

- Developed a Python script that applies properties of stochastic matrices and absorbing Markov chains to find the probability of occurrence for each possible end state

**COVID-19 Mobility Data Analysis, Columbia Data Science Society Hackathon**

September 2020

- Used Python, regression analysis to identify nation-specific density trends on international COVID-19 mobility data
- Worked closely with a team of fellow students to present our findings at the end of the 24-hour hackathon

**2048 AI Agent, Class Project**

July 2020

- Wrote a Python program implementing an expectiminimax algorithm and problem-specific heuristics including game tactics and board monotonicity to automatically and efficiently win the game "2048"