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

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 reimplementation 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"