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 I, Dialogue Systems

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, *Directed Research*, New York, NY — September 2022 – January 2023
- Designed and conducted a study on differences in news framing between cultures regarding a common event
- Applied NLP techniques such as word embedding and sentiment analysis to draw conclusions from text data
- Discovered connections between cultures and headline framing techniques and presented findings in a whitepaper

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 to accurately provide feedback to students

Columbia University School of International and Public Affairs, *Freelance Web Developer*, New York, NY — June – August 2022
- Worked directly with a REST API provider to repair voter information website functionality
- Extended website functionality to support early voting information using JavaScript, PHP to meet user demands
- Modernized website components such as calendar, map, and voting time displays using CSS, HTML, JavaScript

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 and study 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 Beautiful Soup 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, processed, and presented findings on performance data of machine learning frameworks using Python, Keras, TF

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
- Wrote 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
- Implemented 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"