KUKAI NAKAHATA

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EDUCATION

Baruch College, City University of New York (CUNY) New York, NY
Bachelor of Science in Financial Mathematics | GPA: 3.73/4.00 (3.88 for major GPA) Expected May 2021
Minors: Statistics and Quantitative Modeling, Physics

Awards/ Academics

- Competed in the 2019 Putnam
- Dean list: Spring 2019
- Participated in the final round of the 2019 CUNY Math Challenge

Relevant Coursework:
Multivariable Vector Calculus, Probability, Linear Algebra, Numerical Methods for Differential Equations, Linear Programming and Operations Research, Quantitative Decision Making, Putnam Seminar, C++ Programming, Python, Data Structures, Discrete Structures and Algorithms, Stochastic Processes, and Financial Mathematics

SKILLS

Programming: Python, C++, HTML, CSS, JavaScript, MATLAB, Bash, Java, R, PHP, PH3
Technologies: Spyder, JupyterLab, Linux, Git/GitHub, Gimp, MiKTeX, Libre Office, Excel, Access, Apache
Spoken Languages: Native in Japanese and english, Intermediate in Spanish and Italian

PROJECTS

P&D Solver Jun 2019 - Aug 2019

- Developed a general case board solver for the Puzzle & Dragons mobile game using PyQt5, PyAutoGui, pygame, and cv2 libraries in Python for fast image recognition, searching for an optimal strategy, and flexible GUI
- Refined the algorithm to bypass bot detection by implementing human-like movement patterns
- Created as an alternative for users who use obsolete apps or ones with a brute-force search

Baillie-PSW Primality Test May 2019

- Implemented a deterministic Baillie-PSW primality test in Python and C++ for a class challenge project

RELEVANT EXPERIENCE

CUNY Tech Prep New York, NY
Data Science Student Jun 2020 – Present

- Selected for a technical training program, as one of 180 students out of 400+ applicants
- Learn in-demand technologies like Python 3, Jupyter Notebooks, Pandas, Numpy, Scikit-learn, PyTorch, and SQL as well as industry best practices for exploratory data analysis (EDA), feature engineering, data collection and processing, statistical modeling, data visualization, machine learning techniques, data science process, and big data

Baruch Combinatorics REU funded by the NSF RAPID Grant New York, NY
Research Assistant Jun 2020 – Aug 2020

- Develop an agent-based model on a network to simulate the spread of COVID-19 through a small college
- Find and organize current studies related to the parameters of the model
- Update the model as additional real life data of COVID-19 is published
- Attend daily online meetings and provide relevant information from the current model to discuss further steps
- Review presentations and research paper, and provide feedbacks or edits to the appropriate party

Discrete Mathematics Undergraduate Research, Research Foundation CUNY New York, NY
Research Assistant Mar 2020 – May 2020

- Research on linear algebraic and topological approaches to Tverberg's theorem on the integer lattice
- Find and organize scientific literatures related to the subject
- Implement related algorithms in Python and C++, utilized multi-threading, PyTorch, or CUDA for parallelization
- Formulate new conjectures based on possible results obtained from the research
- Apply modified techniques from linear algebra that works only on the integer lattice to find new approaches

SUPPORTING EXPERIENCE

Hajime Japanese Restaurant New York, NY
Assistant Manager/ server/ takeout waiter Jun 2017 – Mar 2020

- Served as a translator for Japanese to English, and vice versa
- Trained and managed the onboarding process for new hires and lead multiple teams of three
- Processed daily transactions totaling $7,000 and managed budget and inventory process

(Last updated: August 2020)