Samarth Arul

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EDUCATION

Northwestern University
Bachelor of Science in Computer Science and Mathematics — *Evanston, IL*

- **GPA:** 3.9/4.0, Dean's List (High Honors)
- **Relevant Coursework:** Data Structures and Algorithms, C/C++ Programming, Computer Systems, Mathematical Game Theory, Multivariable Calculus, Probability and Stochastic Processes, Linear Algebra

EXPERIENCE

Kitchen Kapital (Jumpstart '23) — **June 2023 – Sep. 2023**
Engineering Intern — *Chicago, IL*

- Developed and integrated a web-scraping tool (Python, BeautifulSoup, Selenium) to collect public restaurant ratings
- Created a custom web-crawler to parse restaurant social media site data and return information in JSON format
- Participated in programming and workshops regarding startups, venture financing, pre-seed capital raising, etc.

Department of Computer Science, Northwestern University — **May 2023 – Present**
Research Intern — *Evanston, IL*

- Utilizing Linear Programming and Gurobi Optimization techniques to improve time-efficiency of meeting allocation for Graduate CS Department. Applied Python w/ Google Calendar and Gurobi APIs to develop backend operations
- Optimizing scheduling algorithm to automatically schedule meeting slots between >45 faculty and PhD students for Graduate Student "Visit Day", requiring fairly distributed schedules to be delivered to users in easy-to-read format
- Time-efficiency improvements >90%; communicating design/development progress with key stakeholders

Illinois Institute of Technology — **June 2021 – Oct. 2021**
Research Intern — *Chicago, IL*

- Applied BeautifulSoup/Selenium in Python to create database of academic literature on idiosyncratic deals (i-deals)
- Analyzed statistical findings in research data and presented results at conference research forum (SPARK 2021)

Institute for Policy Research — **Jan. 2021 – June 2021**
Research Assistant — *Evanston, IL*

- Queried data from SEAN Database to document/analyze health-related trends across states in late 2020 and 2021
- Tested software tools (e.g. Qualtrics) and validated/updated data visualizations made using Datawrapper software
- Co-Authored research report (https://osf.io/ywk4a/) with faculty from Northwestern, Harvard Medical, NEU, etc.

PROJECTS/OTHER EXPERIENCE

Northwestern Responsible AI Student Organization (RAISO) — **Oct. 2022 – Present**
Machine Learning + Newsletter Team — *Evanston, IL*

- Applied collaborative filtering with SciKit Learn on the MovieLens 25M Data Set to create movie recommendations
- Researched, wrote, and published articles for weekly technical newsletter, achieving 200+ average views per edition

Equity Pricing Analysis (Python) — **Dec. 2022**

- Applied Random Forest Classifier with SciKit Learn to historical data on YFinance to predict stock price shifts
- Implemented backtesting engine to improve accuracy and predictor selection; achieved ~58% accuracy on new data

Google Dinosaur Runner (C++) — **May 2023**

- Created Google Dinosaur Runner clone in C++ with GE211 engine; applied model-view-controller framework to accept user inputs, display live score, animate actions, indicate scoring milestones with sounds, and adjust game states

ADDITIONAL

Languages: Python, C, Java, HTML/CSS, JavaScript, SQL
Technologies/Tools: MySQL, JupyterLab, NumPy, Pandas, React, Node, Express, Unix/Linux, AWS, Git
Awards: National Merit Scholarship, Presidential Scholar Semifinalist, Network Infrastructures (FBLA) State Champion