Arun Dash

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EDUCATION

BSc. Bioinformatics with Molecular and Cellular Biology Specialization   Tucson, AZ | May 2022
University of Arizona

GENOME SOLVER PROJECT | Undergraduate Research Assistant   June 2021 - Present

- Contributed to Python analysis pipeline that automated the submission of query sequences to NCBI BLAST program and the retrieval of relevant search results.
- Optimized Python program to run more efficiently with the web scraping capabilities of the pandas data analysis library.
- Improved clarity of code to be more readable and accessible for high school students without extensive programming experience.

MATHEMATICA | Survey Research Interviewer   June 2019 - Feb. 2021

- Developed verbal communication skills in order to collect data from survey participants without bias.
- Exercised typing skills and learned new computer applications (Blaise and ConfirmIt) to record and enter data at a fast pace when conducting interviews.
- Applied time management and organization to balance work between multiple projects.

ACADEMIC PROJECTS

WEB SCRAPING AND DATA VISUALIZATION | Python, Pandas, Statsmodels   Jan. 2021 - May 2021

- Analyzed COVID data for vaccinations, cases, and testing in different countries by generating graphs to visualize the data.
- Learned and applied web scraping skills involving the pandas library and matplotlib for data analysis.
- Developed data analysis skills using statsmodels and matplotlib libraries to modify web-scraped data.
- Exercised knowledge of data structures and algorithms to parse pandas dataframes.

GENE NETWORK RESEARCH | Berkeley-Madonna   Aug. 2019 - Dec. 2019

- Learned how to use software application (Berkeley-Madonna) to model genetic switches and networks using differential equations to represent stochastic molecular interactions.
- Generated graphs to visualize changes such as oscillations in molecular species such as mRNA transcripts and proteins based on mathematical models, simulating cellular responses to signals.
- Related simulation results to scientific literature regarding cellular responses to signals and modulation of responses due to statistical noise.

BRCA1 GENE EXPRESSION DATA ANALYSIS | R, RNASeq Data   Jan. 2021 - May 2021

- Applied k-means clustering algorithm to RNASeq data of BRCA1 gene expression in mouse embryoid bodies with R.
- Identified statistically significant pathways containing genes correlated with breast cancer phenotypes through Gene Ontology (GO) enrichment analysis.

SKILLS

Languages: Java, Python, Matlab, R
Tools: Jupyter Notebooks, BLAST, Unix Shell, Pandas, Eclipse, Visual Studio Code, Microsoft Office
Soft Skills: Time Management, Teamwork, Communication, Problem Solving, Leadership, Accountability