SARA FILLER

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https://sarafiller.github.io

EDUCATION

Providence College, Providence, RI — May 2023
Major: Biology BA, Computer Science BS
Honors: Summa cum laude, Dean's List, Phi Betta Kappa, Sigma Xi
Upsilon Pi Epsilon Computing Honor Society, Liberal Arts Honors Program, Campus Ministry Leadership — GPA: 3.87

DIS Study Abroad, Copenhagen, Denmark — Spring 2022
Biomedicine Program: Medical Biotechnology and Drug Development — GPA: 3.80

EMPLOYMENT

Neurophysiology Research Fellowship — Fall 2022-Present
Providence College Biology and Computer Science, Researcher

- Conducted independent Biology and Computer Science research with Dr. James Waters and Dr. Martin Hellwig
- Tracked and quantified novel antennal communication in the ant species, *Brachyponera chinensis*, by applying computer vision and machine learning softwares

Thermofly: Research Experience in Thermal Biology — Summer 2022
University of Vermont Biology, Bioinformatics Research Intern

- Compared two RNA-sequencing methods by examining differences in library quality, expressed genes, and splicing
- Extracted RNA from *Drosophila melanogaster* subjected to distinct thermal stress conditions
- Cleaned, normalized, and analyzed libraries of over 55 million reads to create effective data visualizations in R
- Presented my work through a 10-minute talk as the culmination of the summer program

Public Health Scholar – STD Program — Fall 2021
Rhode Island Department of Health, Intern

- Collected, matched, sorted, and prioritized laboratory, case, and treatment information for all reportable STDs in Rhode Island
- Ensured case information was reported in an accurate and timely manner by communicating with community partners and providers
- Participated in the division's phone triage system, appropriately routing calls from the public and community partners

Bioinformatics Research and Interdisciplinary Training Experience — Summer 2021
Boston University Bioinformatics, Bioinformatics Research Intern

- Researched detection of DNA tandem-repeats with Dr. Gary Benson via NSF-funded REU
- Increased the speed of a genetic variation-detecting software by 86% while retaining accuracy over 90% via testing and implementing new pipelines
- Used command-line bioinformatic tools, GitHub Repository, Bash and Python scripts
- Created a comprehensive guide to the new workflow via Jupyter Notebook
- Presented my work in both talk and poster formats

TECHNICAL SKILLS

Programming experience: C++, Python, R, Java, Bash, SQL, NoSQL, HTML, Snakemake, High Performance Computing
Biology: stereo and dissecting microscopy, PCR, RT-qPCR, gel electrophoresis
Bioinformatics: Sequence Alignment, Sequence Analysis, RNA-seq analysis, genomic file types
Foreign languages: Spanish, French

LEADERSHIP & HONORS

- Society for Integrative and Comparative Biology Annual Meeting 2022: Contributed Talk, "Testing accuracy and speed of VNTRseek, a genetic variation detector, using a restricted read dataset"
- Annual Biomedical Research Conference for Minority Students: Computational and Systems Biology Presentation Awardee 2021: Poster, "Testing accuracy and speed of VNTRseek, a genetic variation detector, using a restricted read dataset"