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, Liberal Arts Honors — GPA: 3.87

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

RELEVANT EXPERIENCE

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 and analyzed RNA-seq libraries of over 55 million reads to create effective data visualizations in R
- Presented my work via a 10-minute talk as the culmination of the summer program

Public Health Scholar – Infectious Diseases — Fall 2021
Rhode Island Department of Health, *Intern*

- Collected, matched, sorted, and prioritized laboratory, case, and treatment data for all reportable STDs in Rhode Island
- Utilized the STD surveillance database to monitor for new reports, perform data entry, and ensure data completeness
- Reported case information in an accurate and timely manner by communicating with community partners and providers
- Supported the division's phone triage reporting system, appropriately routing calls

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 of 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: C++, Python, Seaborn, R, ggplot, Bash, SQL, Microsoft Office, Linux OS, scripting, Docker
Biology: stereo and compound microscopy, PCR, RT-qPCR, gel electrophoresis, transfection, aseptic technique
Bioinformatics: Sequence Alignment, Sequence Analysis, RNA-seq analysis, genomic file types

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"
- Providence College 14th Annual Celebration of Student Scholarship and Creativity 2023: Contributed Talk, "Ants and AI: Describing antennal behavior"