

NHI VO

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EDUCATION

Purdue University, West Lafayette, IN

Bachelor of Science in Genetics

Minors: *Bioinformatics* and *Chemistry*

Dean's List for 4 semesters

Dec 2022

GPA: 3.87/4.0

Relevant Coursework: Comparative Genomics, Practical Biocomputing, Statistical Methods for Biology, R for Molecular Bioscience, Protein Bioinformatics, Molecular Biotechnology

PROJECTS

Pathogenic Mutation Simulation

Apr 2022 - Present

- Preprocess sequence data obtained from bioinformatics databases, such as NCBI, using basic linux commands for further mutational analyses
- Identify SNPs among nucleic acid and protein sequences using bioinformatics tools, such as bwa, mafft, samtools, bcftools, and IGV
- Submit Slurm jobs of python and bash scripts to high-performance computing (HPC) clusters for processing the analyses of large datasets
- Develop an object-oriented Python script for an interactive simulation of the evolution of different pathogens using the results from mutational analyses performed

RNA-seq Gene Expression Analysis, Purdue University, West Lafayette, IN

Sep 2021 - Dec 2021

- Processed and analyzed data from WDR77/PRMT5 RNA-seq silencing experiments to identify and visualize differentially expressed genes
- Constructed heatmaps with clustering for visualization of expression pattern of GO terms obtained from GO enrichment analysis using the web-based tool GOrilla
- Utilized the Shiny package in R to construct an interactive document that allows user input for heatmap parameters via a graphical interface

Genomic Ranges Assembly Tool, Purdue University, West Lafayette, IN

Jan 2022 - Feb 2022

- Devised a method to parse and sort data from GFF and BlastX file for ranges assembly
- Developed a Python script with OOP that identifies overlapping linear sequence ranges

Community Plarn (plastic-yarn) Crochet Project

Aug 2021 - Present

- Gather plastic bags from the community, such as from student organizations, cultural centers, peers, etc. to use as materials for the project
- Repurpose used plastic bags into plarn to crochet mats and tote bags

WORK EXPERIENCE

Kihara Bioinformatics Laboratory, Purdue University, West Lafayette, IN

Aug 2021 - Present

Undergraduate Researcher

- Test a reinforcement learning (RL) algorithm for drug generation with molecules collected from databases such as ChEMBL, ZINC, QM9 and processed using R
- Assess molecules generated by the RL algorithm by utilizing the cheminformatics software RDKit to visualize and calculate Tanimoto similarity for each pair of compounds
- Utilize OpenBabel, Autodock, and Pymol to investigate interactions among a large set of generated molecules against a target protein
- Program Python and Bash scripts to manipulate large datasets for use as proper input in molecular analysis and conversion tools

Information Technology at Purdue, Purdue University, West Lafayette, IN

Aug 2021 - May 2022

Technology Supervisor

- Supervise student staff to ensure proper operation and provide performance feedback
- Ensure student staff are working as scheduled and communicate effectively to resolve issues in a timely manner
- Train new staff members and provide support by regularly visiting offices across campus

