LISA N. CAO

Undergraduate Student

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WHO AM I?

I now enjoy building open source tools for bioinformaticians after spending a few years doing bench and animal work in biobehavioural research labs. My most recent and notable achievement includes leading the winning Hackseq'19 with my project BiocSwirl. I got my tech start working as an entry level Linux SysAdmin in the nonprofit sector.

R

Python

SQL

Bash

Git

LaTeX

HTML5

SKILLS

- Proficiency in UNIX/Linux Systems, hardware and repository management
- Strong version control and package maintenance skills in documentation, workflow, and issue management
- Experience using standard bioinformatics tools and filetypes at the command line
- Knowledge of human genomics, neuroinformatics, and scRNA/snRNA-seq and ChIP-seq pipelines
- Communication and presentation skills that are effective for technical subjects at beginner and advanced levels
- Ability to interpret, troubleshoot, research, and report on complex topics in computer science and biology

EXPERIENCE

2015 – 2018
R

Workshop Facilitator   **SFU Scientific Programming Group**

I lead hands-on workshops for graduate students with a focus on practical skills that can be used to immediately improve research. Examples of workshops I've taught are: Introduction with Bioinformatics with R, Heatmaps in R, and Resume/CV's with RVitae.

2016 – 2019
Benchwork / R

Research Assistant   **Sleep and Circadian Neuroscience Lab, Dr. Ralph Mistlberger**

Performed common laboratory neuroscience histology and biochemistry methods and gained experience with trangenic mice. I have also done data cleaning, basic data analyses, linear mixed modeling, and data visualization on behavioural time-series data.

2014 – 2019
Benchwork / R

Research Assistant   **Behavioural Endocrinology Lab, Dr. Neil Watson**

Performed ELISA hormonal immunoassays on human saliva and common laboratory maintenance activities. Also worked towards improving data practices through archiving and developing a reproducible R workflow.

2014 – 2017
Ubuntu / Bash

Linux System Administrator   **Vancouver Women's Health Collective**

Oversaw all hardware and software maintenance, networking, and printing for a computer lab running a mix of Windows and Ubuntu systems. Provided free, open source, and user-friendly software solutions for refurbished computers. Worked in a cross-platform environment.

PROJECTS

2019 – Present
R / Bash

BiocTools   **github.com/biocswirl-dev-team/**

An R package containing in-depth and easily updateable courses (BiocSwirl) used to teach entire bioinformatics workflows in R/Bioconductor using a highly configurable, lightweight and feature rich terminal interface (BiocTerm) with multi-language support. Winner of Hackseq2019.

2020
R

Visualization of Gene Expression Data   **STAT240 Assignment**

An Interactive R Shiny App that provides Kernel Density Estimations of select genes based on experimental condition using the GSE21935 dataset investigating BA22 schizophrenia indicators.

EDUCATION

2012 – Present

Bachelor of Arts Psychology, Minor Statistics   **Simon Fraser University**

Select Schoolwork: R Shiny App for Gene Expression, Histogram Functions from Scratch, Data Analysis in R, SQL Querying, Webscraping, Introductory Python, Biology, Psychopharmacology

CERTIFICATIONS

Epigenomic Data Analysis
CCAC Animal Lab Training
Laboratory Safety Training

HOBBIES

In my free time I enjoy modding video games, customizing my linux setup, performing gongfu tea ceremonies, and cooking.

NON PROFIT

I am currently an organizer for Hackseq, RLadies Vancouver, Vancouver Datajam, and the SFU Scientific Programming Group.