

Department of Biostatistics and Bioinformatics

Job Code 1378 – Systems Programmer, level 12

Occupational Summary

Work with an interdisciplinary team exploring how genetic variation that alters gene regulation contributes to complex human traits using a combination of high-throughput genomics, computational biology, and traditional molecular biology and genetics experiments. Design and develop a web application to visualize and explore time-course genomic data with focus on the front and/or back-end layers and implement rich reactive visual components exploiting the HTML5 standard and a variety of available JavaScript frameworks (e.g. React, Angular JS, Meteor). The server provides access to a NoSQL database containing coordinate-based gene expression, transcription factors binding, and histone modifications data.

The Reddy lab is part of the Duke Center for Genomics and Computational Biology (GCB) which hosts a High Performance Computing (HPC) cluster. This position will help communicate with the GCB system administrators and solve incidences that lab members confront while using the HPC cluster. This position offers the possibility of building skills in web development, LIMS management and system administration while contributing to genomics/medical research and working in partnership with wet lab researchers.

Preferred Skills: Proficiency in programming languages commonly used in web development (HTML, JavaScript and CSS); Strong knowledge of Linux systems; Programming skills in one or more scripting languages commonly used in scientific computing, most preferably Python; Strong experience working and programming in a Unix environment.

Interested applicants must apply directly online at www.hr.duke.edu/jobs - Requisition #401128359.

Work Performed

Participate in the design and implementation of data analysis pipelines and web-based applications to visualize and explore high-throughput sequencing data coming from genomic studies. Implement automatized unitary tests and conformance tests to facilitate collaborative development of new features.

Participate in the customization and administration of the Laboratory Information Management System (LIMS) used in the lab. This platform provides a highly configurable user-interface to help clinicians in the lab keep track of samples in different steps of their workflows and pipelines associated with the data production. Support lab members in using and exploiting the capabilities currently existing in the LIMS. Identify

and implement missing features to overcome limitations in the LIMS by working together with the final users and the technical support team (Clarity LIMS customer service).

Assist lab members using the HPC cluster and communicate with the system admins when problems arise. Identify technical problems that might limit the productivity of other lab members.

Work together with the GCB system admins to manage a backup storage system for the sequencing data generated in the lab.

Perform other tasks and special projects as assigned.

Education/Training

Work requires a bachelor's degree in Computer Science, Information Technology, Information Science or related field.

Experience

Work requires two years of programming experience, or an equivalent combination of relevant education and/or experience.

Skills

Basic Requirements: Proficiency in programming languages commonly used in web development (HTML, JavaScript and CSS); Strong knowledge of Linux systems; Programming skills in one or more scripting languages commonly used in scientific computing, most preferably Python; Strong experience working and programming in a Unix environment.

Additional qualifications: Demonstrated experience working in a collaborative web-app project; Familiarity with version control systems (Git preferably); Experience working with relational and NoSQL databases; Knowledge of best practices to organize, replicate, and back up high-volume data; Experience with tracking and managing data and metadata in a LIMS; Strong interpersonal and communication skills with a diversity of technical and non-technical collaborators.

Duke University is an Affirmative Action/Equal Opportunity Employer committed to providing employment opportunity without regard to an individual's age, color, disability, genetic information, gender, gender identity, national origin, race, religion, sexual orientation, or veteran status.