position description

Date: May 2020

Title: Analyst Programmer 2

Department: Genetics and Genome Sciences

Management Center: School of Medicine

Location: Biomedical Research Building

Supervisor Name and Title: Thomas LaFramboise, PhD, Associate Professor

POSITION OBJECTIVE

Working under general supervision, the Analyst Programmer 2 will analyze and define system scope and objectives through research and fact-finding to develop or modify moderately complex applications for NIH sponsored projects that are expected to help identify inherited mutations that are important in cancer and may lead to novel patient treatments, as well as a deeper understanding of the causes of some tumors. The analyst programmer will prepare detailed specifications for project management plans and write, modify, document and test code and existing pipelines designed to process and analyze high-throughput sequence data. The position will require manipulation of enormous (up to 100 GB) data files in the UNIX environment and using existing pipelines and custom scripts to post-process and interpret the results. Off-the-shelf packages and self-written code will be utilized to generate images describing the results.

ESSENTIAL FUNCTIONS

1. Analyze and define system scope and objectives through research of customer needs. Prepare detailed specifications for project management plan. Design and/or modify programming applications. Develop plans to transition data and applications to server. Download and process large DNA and RNA sequence files, both steps require acquisition, installation and modification of existing pipelines. (35%)

2. Design, code, test, debug, modify and document moderately complex systems requiring knowledge of processes. Perform analysis of processed data to interpret biological relevance using R/Python packages and stand-alone programs. (20%)

3. Modify pipelines or create new pipelines to customize analysis. These scripts will be written in R and/or Python. (15%)

4. Define requirements and develop solutions for end users and the laboratory team. Create a database for both the raw files and for the post-processed results using SQL or related software. (15%)

5. Create quality images for papers and grant proposals. These images will be created using R, PowerPoint and software such as Abobe Illustrator and Photoshop. (6%)

NONESSENTIAL FUNCTIONS

1. Perform statistical tests in R and/or SAS to aid data interpretation. Ensure timely production turnover and follow-up after implementation. (5%)

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2. Present in lab meetings. Train undergraduates and other lab personnel as required. (3%)

3. Preform other duties as assigned (1%)

CONTACTS

Department: Daily contact with department staff in consultation necessary for data analyses, code debugging and code optimization.

University: Contact with department administrators to exchange information.

External: May have contact with outside consultants and representatives in consultation necessary for data analyses, code debugging and code optimization.

Students: Interaction with graduate students in consultation necessary for data analyses, code debugging and code optimization.

SUPERVISORY RESPONSIBILITIES

This position has no direct supervision of staff employees.

QUALIFICATIONS

Experience and Education: 2 years related experience and Associate's degree in related field OR 0 years of experience and Bachelor's degree in related field required**.**

REQUIRED SKILLS

1. Accountability/integrity, customer/quality focus, diversity/maturity, flexibility/receptivity, interpersonal relations, leadership/supervision, planning/organizing, problem solving, project management, self-development and teamwork.

2. Experience in languages such as R, SAS and Python.

3. Working knowledge of relational databases such as Oracle, including SQL.

4. Proficient in statistical and data mining for data interpretation.

5. Basic PC skills, general knowledge of Windows and Microsoft Office products. Experience with operating systems such as UNIX.

6. Experience with basic SHELL script development.

7. Ability to meet consistent attendance.

8. Ability to interact with colleagues, supervisors and customers face to face.

WORKING CONDITIONS

General office environment. The employee will perform repetitive motion using computer mouse and keyboard to type. Limited manual dexterity required. Little or no exposure to hazards.