Position No: Unassigned
Profile Title: Data Analyst
Faculty, School Office: University of Toronto Libraries
Department: Collections & Materials Management
Pay Scale: 02U

Position Summary: Under the direction of the immediate Supervisor, the Data Analyst is responsible for providing technical support and operational oversight for the analysis and visualization of library data. The Data Analyst works with librarians and staff across the University of Toronto libraries to gather, standardize, analyse and visualize data to meet external reporting and accountability requirements and to support library initiatives and planning. Transforms, manipulates, and converts data and statistics. Creates dashboards for various data collections and projects. Maintains and updates data inventories.

Duties and Responsibilities:

> **Operationalizing and Visualizing Data**: Provides data analysis and visualization support for library assessment and reporting. Determines which data is needed to answer library operational questions, retrieves, analyses, and visualizes data to meet stakeholder and project needs. Analyze data for trends, patterns and prepare findings for presentation to Library leadership and other stakeholders. Clearly and concisely expresses complex concepts in simple terms and communicates technical information to non-technical staff.

> **Data Consultations:** Provides technical support for library staff in all aspects of quantitative and qualitative research methods and in utilizing appropriate analysis tools and methods, makes suggestions and recommendations on the design and data collection. Assists with the coordination of data collection, data manipulation, and statistical analyses in order to support various library projects. May support researchers and research projects. Recommends provisions for data cleaning, statistical analyses, communication of results, documentation of all methodologies. May research and review options for data collection and retrieval and select methods that support project needs.

> **Data manipulation & transformation**: Carry out or lead projects to answer operational and research questions through the identification, retrieval, manipulation and analysis of relevant data. Design and implement extract, transform, load (ETL) processes to create data pipelines and aggregate data from multiple sources. Develop and implement best practices for data integrity, workflow and systems routines that support data analysis. Program, maintain, and statistically analyze large and complex databases and data sets. Perform data manipulation (e.g., coding for data entry, recoding of variables for complex data, merging data), database management, data cleaning and data manipulation activities. Transform complex raw data into analyzable form, performing statistical analyses, provide interpretation of results, and summarize results with write-ups, tables, visualizations and other presentation tools.

Independently develops methods, and processes to facilitate data ingestion into systems and statistical software.

Documentation: Documents data structures, decision points and methodologies used in the course of work. Maintains a current, comprehensive inventory of all sources of library data. Meticulously records decisions, transformations, and other methodological considerations to ensure replicability of analysis performed.

Ongoing Learning: Keep up to date with existing and emerging methodologies for data analysis and visualization through independent learning and other professional development activities. Identify and learn the use of new technologies and tools to address new opportunities and challenges presented by organizational needs and data sources.

Special Projects: May lead new library projects and be responsible for planning, organizing and coordinating activities. Performs duties such as assessing project requirements, developing and making recommendations to improve, extend and develop data and visualization services at the University of Toronto Libraries.

Other Duties: As required to support the data and statistical needs of students, faculty and researchers.

Core Competencies:

Accuracy and Attention to Detail: Shows care and attention to detail and ensures work is done correctly and accurately, even in the face of continual interruptions and distractions. Displays a good knowledge of policies and procedures and is able to apply them in specific situations. Identifies and takes steps to correct mistakes.

Communication: Communicates clearly and concisely orally and in writing, using the appropriate mode of communication. Respects, values and accommodates others when communicating with them, in accordance with University policies. Assists colleagues in articulating their questions and problems. Communicates difficult information (e.g., enforcement of rules) sensitively. Helps the library maintain a positive image by consistently representing the institution in a professional manner.

Cooperation: Works effectively and co-operatively with other staff members and may be resource to them. Recognizes individual differences. Helps other staff to achieve objectives. Contributes and participates in work-related activities by sharing experiences and ideas. Works at a variety of tasks and/or service points as required.

Colleague Focused: Follows through on colleague requests, questions, problems, and complaints in a helpful and courteous manner. Meets deadlines. Keeps colleagues informed of progress and advises of problems. Anticipates and respects the needs and expectations of colleagues. Listens to and understands issues from the colleague perspective. Deals with all colleagues calmly and sensitively, even when problems or disagreements occur.

Flexible/Adaptable: Demonstrates ability to be flexible and to anticipate change. Responds appropriately to different work situations, emergencies, fluctuations in workload, a variety of people, and other changing circumstances. Maintains up-to-date knowledge of technologies, techniques, processes, policies and procedures, etc.

Prioritizing and Organizing: Identifies tasks that must be completed and establishes appropriate time frames for self and may also do this for others. May follow up with others to explain the progress of tasks as required. May accommodate multiple or competing demands for services provided, using time management and organizational skills. May work under time pressures and is able to multi task activities.

Additional Competencies:

Problem Solving/Decision Making: Takes responsibility for problems. Exercises judgment when considering alternative solutions. Displays initiative and resourcefulness. Recommends best approach to resolve the current situation. Decides when it is appropriate to consult with colleagues/supervisors or make referrals.

Work Complexities:

Choice of Action (scope of decision-making / judgment used)—selected examples:

Decides what resolutions to provide to complex data related questions.

Researches and recommends most appropriate solution for resolving research problems regarding complex data or types/forms/techniques of statistical analysis gathering.

Requires in-depth knowledge of a variety of quantitative and qualitative data analysis tools and methods to support library operations.

Exercises judgment and initiative to ensure secure storage and maintenance to safeguard the integrity of databases and datasets within this portfolio

Exercises judgment and initiative in determining the most appropriate sources to meet project data needs, including referral of questions to colleagues, other ULT departments, or other university personnel.

Exercises judgment in referring other policy-related issues to appropriate personnel

Demonstrates initiative in identifying and forming relationships with other data stewards.

Consequence of Error—selected examples:

Failure to accurately document assumptions, transformations, or gaps in data may result in decision based on incorrect information and inability to replicate the analysis.

Failure to provide appropriate technical support to colleagues or stakeholders may have unfavorable effect on planning and decision making.

Failure to apply consistent analysis methodology year over year may adversely affect the library's ranking and reputation

Failure to meet reporting deadlines and adhere to specified reporting requirements may damage long standing external relationships

Failure to appropriately document analysis methodologies could result in inconsistent findings year over year and misrepresent the library's performance metrics.

Failure to safeguard confidentiality of data and assigned project may damage the library's reputation and credibility

Failure to demonstrate tact, diplomacy, and professionalism in dealing with colleagues, students, staff, faculty, and visitors, by email, phone, or in-person could reflect poorly on the Library and/or University and could have a negative impact on public relations.

Difficulty—selected examples:

Requires a high level of accuracy and close attention to detail.

Requires continuous learning of the new quantitative and qualitative research methods and statistical tools.

Must be able to independently research and recommend methods to design and collect data.

Must be organized and set priorities to follow up on matters that require tracking over time.

Must resolve problems such as access interruptions related to metadata problems.

Must be able to troubleshoot and resolve access problems to electronic resources.

Must be able to prioritize and re-prioritize work in response to changing circumstances

Maintains current knowledge of Library resources, collections, services, and policies to facilitate appropriate and informed responses to library users.

Contacts:
Co-workers, Librarians, students, researchers, faculty and other library patrons

Independence of Action: Work frequently involves situations that are not covered by established methods or procedures. Employee generally has choice of action in dealing with these situations but consults supervisor (or others) as appropriate in exceptional situations. Employee prioritizes and organizes own work.

Leadership/Coordination of Employees Exercised: May Lead new library projects. Responsible for the work but not the people.

Working Conditions: Office and/or library environment, including Public service area.

Equipment Used: Office equipment.

Qualifications Required:

Formal Education: Bachelor's degree in Computer or Data Science or acceptable combination of education & experience.

Experience:
Three years of related experience. Experience working with Tableau or equivalent data visualization tool. Strong working knowledge of relational databases and query structure. Experience writing scripts in R, Python, PHP and/or Java Script. Experience using APIs to retrieve and parse data. Experience coding in at least one language. One or more years of data modelling and database schema experience. Extensive computer skills in word-processing (WordPerfect, MS Word), database management (SAS, SPSS, Excel, Access); Internet, and presentation packages (Power Point). Ability to work independently and in a team. Excellent analytical, organizational, and interpersonal skills. Effective communication skills, including the ability to clearly and concisely express complex concepts in simple terms and communicate technical information to non-technical staff. Demonstrated skill and experience in data manipulation, management, and statistical analysis. Knowledge of project management principles and experience completing complex projects within timelines.

Other Skills:
Familiarity with statistical principles, especially descriptive statistics.
Knowledge, training or experience in data visualization best practices.
Experience working with data visualization software such as Tableau.
Demonstrated ability in project planning and design using considerable judgment, initiative, and innovativeness in his/her decision-making. Experience working in a higher-education setting.