#### Trent University LogoOPSEU JOB DESCRIPTION

**Job Title:** GIS and Data Support Specialist

**Job Number:** L-070 | VIP: 1414

**Band:** OPSEU-9

**Department:** Bata Library

**Supervisor Title:** Research Data Services Librarian

**Last Reviewed:**  June 19, 2024

#### **Job Purpose:**

Reporting to the Research Data Services Librarian, this role supports students, faculty, and staff in the Trent University Library & Archives by delivering user-focused services and actively participating in strategic planning and daily operations for the Maps, Data & Government Information Centre (MaDGIC). They serve as a primary resource person for geospatial and statistical data and technologies to meet diverse research and teaching needs. They participate in geospatial and data literacy initiatives for the academic community and provide ongoing support to integrate MaDGIC resources and technology with teaching, learning, and research at Trent.

#### Key Activities:

##### Technical Support

* Builds and supports geospatial databases.
* Designs, implements, documents, and maintains GIS applications, tools, and data models to meet operational and research needs.
* Processes vector and raster data sets collected by or for the Trent user community.
* Investigates and resolves problems with data access, formats, field types, processing errors, and corrupt files; documents problems to pass on to vendors or data providers.
* Designs and creates custom maps, apps, and dashboards to make geospatial and data collections available and accessible for intended users.
* Creates and maintains metadata
* Assists users with GIS, Virtual Reality, and visualization technologies.
* Participates in projects and initiatives organized by cross-institutional working groups to inform, influence, and evaluate technical solutions related to geospatial collections, resources, and services in academic libraries.

##### User Support

* Provides basic and complex reference services to faculty, staff, students, administrators, external partners, and public users of geospatial and statistical resources such as cartographic materials, spatial and numeric data, imagery and elevation products, government publications, reference tools and related applications, software, and technologies.
* Demonstrates how to find, access, import, analyze and display geospatial, quantitative, and qualitative data from various sources using diverse presentation methods and technologies
* Responds to requests for geospatial and numeric data, cartographic resources, and government information to meet various research, teaching, and administrative needs and deadlines.
* Instructs users in effective search strategies to retrieve sources from MaDGIC collections and databases, the library catalogue, and external data sources such as government agencies, commercial distributors, academic consortia, and research repositories.
* Assists users with conceptualizing options for spatial-temporal data analysis, modeling, and visualization to support research projects, library initiatives, and university operations.
* Assists users with metadata creation and file mark-up following prescribed standards and best practices
* Maintains proficiency in the fields of GIS and data management to address evolving user needs.
* Maintains records of data requests; conducts required follow-up and follow-through, advising clients of file releases, file updates, vendor notices of corrupted files and corrections
* Advises clients of vendor licence agreements and maintains client records meeting diverse vendor requirements

##### Research and Teaching Support

* Assists with modeling and preparing data files for course and lab assignments, thesis work, faculty research, and community-based research projects.
* Develops, delivers, and supports workshops and other opportunities to advance GIS and data literacy across disciplines.
* Supports the use of geospatial and statistical data and software in research projects and course delivery.
* Collaborates with library and communications staff to inform content that highlights and promotes the use of MaDGIC resources and collections in research.
* Works with library staff, other university departments, and cross-institutional consortia to explore and implement collaborative service models, tools, and delivery methods to improve the accessibility and availability of MaDGIC resources and collections.
* Cultivates and maintains a deep knowledge of geospatial and data resources and methods to support research, teaching and learning needs.

##### Operational Support

* Assists with daily operations, service delivery, website maintenance, opening and closing procedures.
* Supports planning and logistics related to inventory, maintenance, and access to MaDGIC collections.
* Participates in library and broader university committees and working groups; collaborates with colleagues in other library departments and the Archives to continuously improve service delivery and user experiences.
* Leads, supports, and participates in cross-departmental training opportunities.
* Maintains inventories of software and equipment
* Trains, supervises, and directs work of student assistants and students working on experiential learning opportunities related to MaDGIC collections, GIS, and statistical technologies.
* Maintains statistics, outputs reports, and makes recommendations to inform planning and service delivery.
* Documents policies and best practices, creates and maintains manuals and instructions for users.
* Supports GIS and statistical software and application upgrades in MaDGIC facilities.
* Leads and participates in special projects and initiatives related to MaDGIC resources and collections.
* Provides advice and expertise to support the use of geospatial data and GIS technology to manage and carry out university operations.
* Performs other duties as required.

#### Education Required:

* Honours Bachelor’s Degree (4-year) in Geography/GIS or a related field.
* A college degree or post-graduate diploma in Geographic Information Systems or evidence of extensive use of GIS technologies in a research or professional setting.

#### Experience/Qualifications Required:

* Five (5) years of progressive experience using spatial and statistical software and associated technologies
* One to three years’ experience providing client-facing research and support services, experience in an academic environment preferred.
* Experience planning, delivering, and evaluating instructional programs or workshops for users with diverse backgrounds and levels of expertise.
* Extensive experience with Esri Software and services in desktop, server, and mobile environments.
* Working knowledge of leading open source and proprietary software to import, process, analyze, visualize, and manage geospatial data and imagery such as QGIS, RStudio, ENVI.
* Demonstrated proficiency in methods, practices and techniques of advanced spatial modeling, data analysis and visualization using cartographic principles and best practices.
* Familiarity with statistical tests and analyses, including quantitative and qualitative methodologies.
* Familiarity with key statistical agencies and quantitative data resources
* Working knowledge of relational database structures.
* Working knowledge of diverse operating systems for desktop computing and server environments
* Familiarity with spatial and statistical data formats, ability to convert data formats using appropriate software.
* Ability to install hardware and software, and troubleshoot installations
* Ability to apply analytical, conceptual, and problem-solving skills to research problems and questions at the undergraduate and graduate levels
* Knowledge of documentation standards and best practices associated with spatial and statistical data
* Experience using data manipulation languages such as R and Python
* Familiarity with using APIs to integrate, data, services, and capabilities across applications
* Strong written, oral, and interpersonal communication skills
* Excellent records management and organizational skills
* Demonstrated ability to meet deadlines while working on multiple projects with varying deliverables
* Demonstrated ability to work effectively in a team environment, as well as independently with minimal supervision
* Demonstrated commitment to fostering a positive collaborative environment working with diverse colleagues, stakeholders, and cross-functional teams.
* Strong record of engagement in the workplace and an established track record of keeping up with new technologies
* Ability to work evenings or occasional weekends

**Job Evaluation Factors:**

##### Analytical Reasoning

This role encounters a high degree of complexity and frequently requires advanced analytical reasoning. For example, the incumbent regularly

* determines how to assist users of varying abilities with data analysis and data visualization tasks
* recommends data resources and software programs for students, staff and faculty to achieve research, teaching and learning goals
* conceptualizes options for geospatial and statistical data analysis from design and modeling through to analyzing results and visualizing outputs
* collects, cleans, and prepares data for analysis
* troubleshoots errors with geospatial and statistical tools and programs.

Users vary considerably in their level of experience with these tools and methods and represent a diversity of disciplines and learning experiences including the sciences, social sciences, humanities, and experiential learning programs. The incumbent must use analytical reasoning to help users evaluate options for analysis and to customize the assistance provided so it is appropriate to the user’s experience, their research goals, and the requirements of their discipline.

The incumbent is also expected to monitor and analyze usage data on an ongoing basis and use their results to make evidence-based recommendations for long-term planning and service delivery.

##### Decision Making

The incumbent has a high degree of freedom to exercise initiative or act independently in making day-to-day decisions. They are the first point of contact for inquiries about geospatial and statistical data resources and services on campus and regularly

* makes decisions about the best approach to empower users from various backgrounds and disciplines
* balances frequent client service requests with ongoing operational needs
* decides when to seek assistance from colleagues or escalate to a librarian
* determines when a request is out of scope for MaDGIC services and effectively refers users to other services
* prioritizes, plans, and oversees student work related to ongoing collections maintenance and special projects
* makes decisions about when to engage with broader provincial and national data communities regarding geospatial and statistical services in academic libraries.

##### Impact

This role is very impactful within the library and the broader university community. The incumbent

* is a resource for many users who are overwhelmed with the significant learning curve related to using geospatial and statistical data in GIS environments
* empowers students, staff, and faculty to discover the power and potential of using geospatial and statistical technologies to enhance their research, teaching and learning
* plays a pivotal role in advancing spatial and data literacy on campus by delivering workshops and instructing users in topics related to finding, accessing, analyzing, and visualizing data
* provides technical advice and expertise to other university departments regarding the use of GIS tools to improve the efficiency and effectiveness of operations.

##### Responsibility for the Work of Others

Direct responsibility:

* For student assistants working with facilities within or related to the Moore Innovation Hub.

Indirect responsibility:

* For students, staff and faculty using collections and resources in the Maps, Data & Government Information Centre.

##### Communication

Internal:

* Students, staff, and faculty
	+ Respond to requests and deliver client services
	+ Answer queries about MaDGIC collections and facilities.
	+ Communicate usage and facility policies.
* MaDGIC team
	+ Work together to ensure continuity of services.
	+ Align service delivery needs with hardware and system upgrades.
	+ Collaborate on special projects, tools, applications.
	+ Support one another and leverage each person’s skillsets.
* Library and communications staff
	+ Identify, discuss, contribute to communications that highlight innovative examples of MaDGIC collections and resources in research and teaching.
* Technicians and technologists
	+ Collaborate on custom tools, applications, and special projects.
	+ Align service delivery needs with hardware and system upgrades.
* Facilities Management, other university departments:
	+ Request, coordinate, and clarify space planning/room setup.
	+ Work with staff to integrate the use of geospatial data and tools to support operational needs.
* Librarians and library staff:
	+ Participate in planning for the use of specialized tools and applications to make geospatial, cartographic, and statistical collections and services more accessible and available for users.
	+ Share information regarding MaDGIC collections, resources, services.
	+ Participate in staff meetings and events.
* Student employees:
	+ Explain assigned tasks, demonstrate, and oversee use of MaDGIC resources and collections.
	+ Oversee daily tasks and special projects.
* Instructors:
	+ Assist with preparing data for research projects and course delivery.
* IT:
	+ Open and escalate support tickets as needed.

External:

* Vendors:
	+ Track license renewals and troubleshoot issues.
	+ Verify alignment with contract terms and conditions.
* GIS and data staff from other universities:
	+ Discuss aspects of service delivery, gather, and share information.
	+ Collaborate on projects and initiatives.
* Trent and public user communities
	+ Act as resource and liaison for MaDGIC collections and resources.
* Parents and prospective students:
	+ Participate in tours and demonstrations.
* Community partners in experiential learning and other initiatives
	+ Act as resource and liaison for MaDGIC collections and resources.
* Regional, provincial, national data committees and conferences
	+ Develop, deliver, support, participate in workshops, lightning talks, online training sessions, poster sessions, etc.

##### Motor/ Sensory Skills

* Fine motor skills: to conduct on-screen work and data entry using peripherals such as a keyboard, mouse, touch screen.
* Gross motor skills: Moving computer equipment, collection items, book trucks setting up rooms.
* Hearing: Listening and responding to user queries.
* Sight: Reading manuals, contracts, reports, screens.
* Touch: Precision to handle and work with specialized equipment and devices.
* Ability to test and demonstrate the use of virtual reality devices.

##### Effort

Mental:

* Sustained concentration:
	+ To explore and troubleshoot issues, systems, applications, equipment malfunctions.
	+ To conduct research.
	+ To analyze usage statistics.
* Prioritization
	+ To identify and act on the most important needs/issues at a given time.
* Adaptability and flexibility:
	+ To assess and respond to changing needs.
	+ To quickly change course when a solution does not resolve an issue.
* Creativity and imagination:
	+ To resolve challenges.
	+ To contribute to, foster, and support innovative uses of technology.
	+ To continuously improve services.
* Confidentiality:
	+ Related to vendor contracts and terms.
	+ In working with faculty and staff who may be handling sensitive data or information.
* Empathy and Patience:
	+ To work with users regardless of pre-existing knowledge or technical ability.
* Strategic thinking:
	+ To apply technical forethought and plan for changing needs
	+ To evaluate and make recommendations about the role of Hub technology in broader library and university initiatives.

Physical:

* Standing, walking, teaching, and demonstrating in Hub facilities.
* Demonstrating use of specialized equipment in other spaces (i.e., use of a high-precision GPS unit outdoors, use of VR headsets).

Moderate lifting (up to 11 kg/25 lbs.) of computers, office equipment, Hub equipment, rearranging rooms, setting up spaces for instructional purposes.

##### Working Conditions

Physical:

* Injury:
	+ Operation of potentially dangerous electrical equipment.
	+ Exposure to potentially dangerous materials.
	+ Potential for dust on equipment, in spaces.
	+ Eye strain, complications from sitting at a computer for long periods.
* Monotony:
	+ Repetitive tasks.
	+ Extended time on computers.

Psychological:

* Occasional complaints:
	+ From users about services, missing items, logistics.
* Frequent coinciding deadlines:
	+ Many tasks may be due simultaneously during busy times i.e., beginning of academic terms, end of FY, etc.
* Multiple competing priorities:
	+ Regularly serving multiple user communities with different needs and goals such as academic departments, university operations, public users, librarians, and library staff.
* Frequent interruptions
	+ To respond to walk-in requests.
	+ To address priority issues.
	+ Unexpected changes that interrupt planned activities and schedules.
* Group dynamics:
	+ Comfort with supporting and being supported by colleagues.
	+ Collaboration with diverse stakeholders within and outside the library.
	+ Opportunities to take on leadership, facilitation or participatory roles in various committees, communities and working groups within and outside the library, including as part of regional, provincial and national data committees and working groups.