#### Trent University LogoOPSEU JOB DESCRIPTION

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

**Job Number:** L-085 | VIP: 1422

**Band:** OPSEU-9

**Department:** Bata Library

**Supervisor Title:** Research Data Services Librarian

**Last Reviewed:**  June 19, 2024

#### **Job Purpose:**

to the Research Data Services Librarian, this role supports students, faculty, and staff in the Trent University Library & Archives by managing and maintaining technical infrastructure and web services related to the use of GIS and research data management. They actively participate in strategic planning and daily operations for the Maps, Data & Government Information Centre (MaDGIC) and provide technical leadership and client support in the use of enterprise GIS and data resources to support teaching, learning and research at Trent.

#### Key Activities:

##### Technical Support

* Provides technical expertise in the use of enterprise GIS and data systems to manage and conduct university operations. Develops, edits and maintains GIS programs and scripts for desktop, server and mobile applications using a variety of languages and software, adhering to industry standards for web and GIS technologies.
* Assists with technical aspects of designing, creating, and publishing custom maps, apps, and dashboards to make geospatial and data resources available and accessible for intended users.
* Provides technical support for enterprise RDM services managed by the library.
* Participates in projects and initiatives organized by cross-institutional consortia and working groups to inform, influence, and evaluate collaborative solutions related to enterprise data platforms and services in academic libraries.
* Designs, develops, implements and maintains enterprise databases, GIS and RDM applications using a variety of software and languages.
* Verifies data integrity, loads data to enterprise systems, documents procedures.
* Creates and maintains metadata.

##### Systems and Hardware Support

* Manages and maintains the library’s GIS servers and workstations by installing and troubleshooting system software and applications.
* Works with IT, library staff and vendor support to perform enterprise GIS and data system upgrades and resolve development and production problems.
* Performs impact analysis and conducts user acceptance testing for systems changes, patches and upgrades.
* Reviews logs and monitors system performance.
* Implements and maintains backup and recovery processes for library collections hosted and managed within MaDGIC systems and infrastructure.

##### User Support

* Provides basic and complex reference services to faculty, staff, students, administrators, external partners, and public users of MaDGIC services, applications, and infrastructure.
* Responds to requests for geospatial and numeric data, cartographic resources, and government information to meet various research, teaching and administrative needs and deadlines.
* Assists with database design, development, and maintenance to improve the searchability of collections hosted on MaDGIC or library infrastructure.
* Provides specialized support in the use of enterprise systems, databases, and programming languages to meet advanced data analysis and research data management (RDM) needs across disciplines.
* Maintains proficiency in the field of enterprise information and data systems to address evolving user needs.

##### Research and Teaching Support

* Assists researchers with conceptualizing options for advanced data analysis and modelling, including the use of enterprise applications and high-performance computing resources for intensive data processing.
* Developers, delivers, and supports workshops and learning opportunities to advance GIS and data literacy across disciplines.
* Supports the use of enterprise GIS and data platforms in research projects and course delivery.
* 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 for research and teaching.
* Cultivates and maintains a deep knowledge of enterprise GIS and data analysis systems and tools to support research, teaching and learning needs.

##### Operational Support

* Assists with daily operations, service delivery, opening and closing procedures.
* Supports technical aspects and processes to inventory maintain and provide access to MaDGIC collections.
* Trains, supervises, and directs technical work of student assistants and students working on experiential learning opportunities that require the use of enterprise GIS and RDM services.
* 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.
* Provides technical leadership on special projects and initiatives related to storing, securing, publishing, maintaining, and providing access to MaDGIC resources using enterprise systems and applications.
* Works with IT to generate snapshots, conduct user acceptance testing, and troubleshoot errors with MaDGIC servers and applications.
* Provides advice and expertise to support the use of MaDGIC server infrastructure and enterprise applications to manage university operations.
* Produces high-quality cartographic maps, reports and data extracts.
* Performs other duties as required.

#### Education Required:

* Honours University Degree (4 year) in GIS, Remote Sensing, or a related field.
* Continuing education in enterprise information systems, web development or experience working with enterprise GIS and information management systems in a research or professional setting.

#### Experience/Qualifications Required:

* Five (5) years of progressive experience supporting the design, delivery and use of enterprise data and information systems and related services in a relevant field.
* One to three years’ experience providing client-facing research 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.
* Demonstrated proficiency in web design and web server configuration (e.g. IIS).
* Experience using web-based languages and technologies such as JavaScript, XML, Python, PHP, JSON, HTML, CSS, Node js.
* Experience using APIs to integrate data, services, and capabilities across applications.
* Experience with open-source GIS and data analysis applications in desktop, server and mobile environments.
* Working knowledge of relational database structures.
* Experience with MS SQL Server.
* Strong verbal, written, and interpersonal communication skills including technical writing and documentation.
* Excellent records management and organizational skills.
* Ability to meet deadlines while working on multiple projects with varying deliverables.
* Strong client service and research skills appropriate to an academic environment.
* 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.
* Ability to work occasional evenings or weekends.
* Strong record of engagement in the workplace and an established track record of keeping up with new technologies.

**Job Evaluation Factors:**

##### Analytical Reasoning

This role encounters a high degree of complexity and frequently requires advanced analytical reasoning to successfully fill the roles and responsibilities of the job. For example, the incumbent regularly

* determines how to assist users of varying abilities with advanced data analysis and complex data processing tasks using MaDGIC infrastructure and enterprise computing resources
* assesses the feasibility of using programming languages to automate tasks and workflows
* develops a course of action to address priority system and application upgrades and adjusts quickly when a solution does not produce the intended outcome.
* works with IT, library systems and MaDGIC team members to align system and hardware requirements with operational and service delivery needs
* troubleshoots errors with enterprise GIS and RDM systems and tools.

##### Decision Making

The incumbent will have 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 MaDGIC enterprise systems to support GIS use, data analysis, and research data management needs on campus and are regularly expected to:

* make decisions and recommendations about the effective use of MaDGIC system architecture to deliver enterprise GIS and RDM services for users from various backgrounds and disciplines
* balances frequent client service requests with ongoing operational needs
* decides when to escalate technical issues to an IT professional
* 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 enterprise systems, services and special projects.

##### Impact

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

* is a resource for users who require enterprise services and advanced computing power to process, analyze, and manage complex research data
* supports the implementation and use of enterprise GIS and data systems to benefit the Trent research community
* plays a pivotal role in advancing spatial and data literacy on campus by delivering and supporting workshops and instructing users in topics related to advanced data analysis and the use of enterprise tools and programming languages to automate data processing and management tasks
* designs, builds, and maintains enterprise databases to continuously improve the accessibility and availability of special collections and resources for research and teaching
* provides technical advice and expertise to other university departments regarding the use of enterprise tools and services 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 enterprise systems and services in the Maps, Data & Government Information Centre.

##### Communication

Internal

* Students, staff, and faculty
  + Respond to requests and deliver services.
  + Answer queries about MaDGIC infrastructure and resources.
  + Communicate usage and facility policies.
* MaDGIC team
  + Work together to ensure continuity of services.
  + Align hardware and system upgrades with service delivery needs.
  + 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 enterprise GIS and RDM services in research.
* Technicians and technologists
  + Collaborate on custom tools, applications, and special projects.
  + Work together to analyze impacts of recommended system upgrades, patches, enhancements.
* Facilities Management, other university departments:
  + Provide technical advice and guidance to integrate the use of enterprise data and services to support operational needs.
* Librarians and library staff:
  + Participate in planning for the use of enterprise systems and tools to make library 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 enterprise services and resources.
  + Oversee daily tasks and special projects.
* Instructors:
  + Assist with technical support and the integration of MaDGIC enterprise services in teaching and course delivery.
* IT:
  + Align system upgrades, conduct user acceptance testing for monthly and ad hoc system upgrades, patches, enhancements.
  + Troubleshoot issues.
  + Open and escalate support tickets as needed.

External

* Vendors:
  + Troubleshoot enterprise issues with technical support.
  + Verify alignment with contract terms and conditions.
* GIS, data, and web development staff from other university
  + 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 enterprise services.
* Parents and prospective students:
  + Participate in tours and demonstrations.
* Community partners in experiential learning and other initiatives
  + Act as resource and liaison for MaDGIC enterprise services.
* 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 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.
  + 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.