**Department of Human Resources**

**OPSEU Job Description**

**Job Title:** Data Visualization and Statistical Support Specialist – MaDGIC **Job Number:** L-070

**NOC:** 2172

**Band:** 9

**Department:** Bata Library

**Supervisor Title:** Librarian, MaDGIC

**Last Reviewed:** August 30, 2017

**Job Purpose**

Reporting to the Head of the Maps, Data and Government Information Centre, the Data Visualization and Statistical Support Specialist assumes a broad range of responsibilities associated to the promotion, development and daily operations of the Maps, Data & Government Information Centre (MaDGIC). S/he serves as a primary resource person for data visualization and statistical technologies on campus, meeting a variety of research and teaching needs for quantitative, qualitative and spatial information. S/he participates actively in data literacy and numeracy initiatives organized by MaDGIC for the academic community. S/he provides technical support for library GIS and data visualization labs, corresponds with vendors, and implements and tests software and equipment. S/he develops manuals and guides, and provides ongoing support to researchers and students using lab equipment and specialized software. The incumbent builds relational databases for geospatial and statistical files and custom designs scripts. S/he manages projects and supervises student assistants.

**Key Activities**

*Data Visualization and GIS Lab Support:*

1. Provides ongoing support to labs ensuring smooth functioning of setup and daily workflows
2. Performs new system installations, system upgrades and migrations
3. Builds and supports geospatial databases ensuring reliable, recoverable and scalable databases
4. Designs, implements, documents, analyses, and supports custom GIS processing tools and data models
5. Develops and deploys end-user practices and tools for data extraction, queries, and data manipulation in accordance with client requirements
6. Ensures quality and timely resolution of issues related to custom GIS and data applications
7. Diagnoses and resolves database access and performance issues, monitors database systems details to identify inefficiencies, recommends changes, and implements capacity and resource expansion
8. Develops and maintains security controls for all databases
9. Researches and recommends new database products, services, protocols, and standards
10. Writes and updates web pages, custom designing scripts and using appropriate mark-up languages and software
11. Monitors systems usage statistics and maintains logs
12. Defines and documents best practices, creates and maintains technical manuals and inventories, writes and maintains instructions and metadata for clients
13. In consultation with supervisor, ensures timely and ongoing communication with Library Systems Office, Trent IT, data producers and GIS software vendors, as appropriate

*Data Processing;*

1. Processes microdata files; runs syntax command files; checks validity of output
2. Writes statistical syntax for remote job submissions
3. Processes vector and raster data sets; builds and joins attribute databases; clips files
4. Investigates and resolves problems with data; documents problems to pass on to survey investigator or to data provider
5. Creates custom maps
6. Maintains holdings database of files and creates metadata
7. Creates data archival solutions and ensures logical migration of legacy data
8. Prepares files for clients as required for course assignments, classroom instruction, thesis work, faculty research, labs on campus, and library workshops ensuring timely and accurate delivery of information

*Client Support;*

1. Serves as a primary resource person for geomatics and statistical technologies on campus, meeting a variety of research and teaching needs for geospatial and statistical information
2. Conducts reference and research interviews
3. Provides demonstrations of files and databases using diverse presentation methods and technologies
4. Monitors and responds to electronic requests providing technical responses for required deadlines
5. Assists clients with identifying, acquiring, importing and displaying data as well as conceptualizing project options
6. Assists clients with metadata creation and file mark-up following prescribed standards and best practices
7. 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
8. Participates in the MaDGIC Unit’s library instruction program. Prepares sample files and databases, writes and adapts instruction materials for course content
9. Advises clients of vendor licence agreements and maintains client records meeting diverse vendor requirements
10. Writes user documentation and guides

*Other;*

1. Maintains inventories of software and equipment
2. Trains and supervises student assistants
3. Maintains statistics and provides reports to supervisor as requested
4. Provides reference assistance for maps and government publications collections, and assists with collections processing and maintenance as required
5. Performs other duties as required

**Education**

Honours Bachelor Degree AND College degree or post-graduate diploma in Geographic Information Systems or related field

**Experience Required**

* Five years of progressively more responsible experience using spatial and statistical software and associated technologies
* Extensive experience with Esri Software Suite including desktop, server, web and cloud products. Working knowledge of other open source and proprietary software for manipulation and analysis of spatial data including remote sensing imagery
* Proficient in the methods, practices and techniques of advanced spatial modeling
* Advanced knowledge of statistical methods and analysis, including quantitative and qualitative methodologies. Demonstrated experience with statistical software and data visualization tools such as SPSS, Stata, SAS, Tableau
* Familiarity with key statistical agencies and quantitative data resources
* Excellent knowledge of GIS relational database structures, their maintenance and operation
* 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 run transformation and syntax codes and to develop validation scripts
* Ability to install hardware and software, and trouble shoot installations
* Strong research skills.  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 to spatial and statistical data
* Proficiency using scripting and data manipulation languages such as Python, Perl, JavaScript, R, XSLT
* Familiarity with API libraries and ability to modify and apply web applications
* Strong written, oral and interpersonal communication skills
* Excellent records management skills
* Demonstrated ability to meet aggressive deadlines, working on multiple projects with varying deliverables
* Must be able to work in a team and collegial environment, as well as independently with minimal supervision
* Strong record of engagement in the workplace and profession and an established track record of keeping up with new technologies
* Must be able to work evenings or occasional weekends