

**MICHIGAN TECHNOLOGICAL UNIVERSITY  
CLASSIFICATION DESCRIPTION**

**Job Title:** RESEARCH ASSOCIATE – GIS PROGRAMMER  
(pay grade 220)  
**Department:** MICHIGAN TECH RESEARCH INSTITUTE  
(Based in Ann Arbor)  
**Salary Range:** MINIMUM \$27,465 – MAXIMUM \$57,138  
**Exempt (Y/N):** YES  
**Supervisor:** RESEARCH SCIENTIST II

<b>POSITION DURATION DEPENDENT UPON EXTERNAL FUNDING</b>
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**SUMMARY:** Provide support for MTRI programs focused on the application of programming and geospatial analysis to solving governmental and societal needs through sponsored research. The ability to connect geospatial models to decision support systems through targeted applications of coding will be important. The position is based at MTRI in Ann Arbor, MI ([www.mtri.org](http://www.mtri.org)).

**ESSENTIAL DUTIES AND RESPONSIBILITIES** include the following. Other duties may be assigned.  
Apply programming skills to solving project tasks for ongoing and new MTRI research projects.  
Understand geospatial and remote sensing concepts that enable appropriate integration of models and algorithms into MTRI tools through programming.  
Under direction, construct geospatial databases applicable to a wide variety of sponsor applications.  
Contribute to sponsor presentations of technical results.

**SUPERVISORY RESPONSIBILITIES:**

None.

**QUALIFICATION REQUIREMENTS:** To perform this job successfully, an individual must be able to perform each essential duty satisfactorily. The requirements listed below are representative of the knowledge, skill, and/or ability required. Reasonable accommodations may be made to enable individuals with disabilities to perform the essential functions.

**EDUCATION and/or EXPERIENCE:**

**REQUIRED:**

Bachelor's degree in computer science or computer engineering.  
Practical, demonstrated knowledge of Python and one or more other programming languages (C++, C#, VB.NET, Java).  
Classwork in statistics and higher-level mathematics.  
Experience using personal computers and typical office software packages in Linux and Windows environments.

**DESIRABLE:**

Internship experience in a geospatial research environment.

**OTHER SKILLS AND ABILITIES:**

**REQUIRED:**

Demonstrated ability to obtain a DoD security clearance, which requires United States citizenship.  
GIS skills and understanding of spatial concepts and theory.  
Experience with geospatial libraries (i.e. GDAL/OGR, PostGIS, Shapely, ArcGIS Python scripting).  
Knowledge of integrating relational databases (such as PostgreSQL) into tools through custom programming.  
Excellent written/oral communication skills.  
Demonstrated organizational ability and attention to detail.

**DESIRABLE:**

**Experience with statistical analysis software (such as SPSS, S-Plus, SAS, JMP, R).**

**Experience with analysis and processing of remotely sensed imagery.**

**Experience with programming dynamic web applications.**

**Experience with open source web mapping tools (such as GeoDjango, OpenLayers, Mapfish).**

**Experience with desktop ESRI GIS software such as ArcMap, Spatial Analyst, and Model Builder.**

**Experience with MATLAB software for data analysis and simulation.**

**Experience with remote sensing software such as ERDAS Imagine.**