GIS (Geographic Information System) Skills

Use the following lists to show your skills on your resume and cover letter. You may have additional skills not shown on this list. List your skills in a separate Skills/Qualifications section on your resume. Highlight the most relevant skills in the middle paragraph of your letter.

Sample Skills/Skill Headings

Analysis & Modeling

Application Development

Cartography

Communication

Computer Programming

Data Modeling

Database Management

Documentation

Geodatabase Design

Georeferencing

Data Visualization

Mapping & Visualization

Metadata Creation & Editing

Model Building

Photogrammetry

Project Management & Design

Research/Data Collection

Remote Sensing & Image Analysis

System Application/Design/Maintenance

Tools & Technology

Software: ArcGIS, ArcMap, ArcPro, ArcGIS online, Collector, Pathfinder, QGIS, GRASS, AutoCAD, Autodesk, SQL, MS Visio, MS SharePoint, Access, Excel, Photoshop, Illustrator, Google Earth, Mapbox, Carto, Survey123,

Equipment: Trimble GPS equipment, plotter, GNSS receiver, tablets

Programming: Python, C++, C#, .NET, object oriented programming, HTML, CSS, JavaScript, SML, PHP

Certifications/Professional Development & Training

GIS Certificate, Portland Community College, 20xx

ArcGIS I & II certifications – ESRI, 20xx

Certified GIS/LIS Technologist – ASPRS, 20xx

Certified Photogrammetric Technologist – ASPRS, 20xx

Certified Remote Sensing Technologist – ASPRS, 20xx

Sample Skill Statements

Following is a long list of statements for specific skill sets in this field (scroll down to your interest area):

- **Mapping & Cartography**
- **Remote Sensing & Image Analysis**
- **Research/Data Collection**
- **Analysis & Modeling**
- **Database Management**
- **Computer Programming/Application Development**
- **Project Management & Design**
- **Documentation**
- **Communication/Training/Industry Knowledge**

Mapping & Cartography

- Working knowledge of GIS hardware and software capabilities
- Familiar with cartographic design principles
- Designs maps with consideration in layout, colors, scale, symbols, etc.
- Created and displayed maps for print, web, and electronic mediums
- Compiled source data and edited maps in all phases of production
- Created and published custom interactive maps and data visualizations
- Ability to interpret a wide variety of maps
- Used ArcMap (or ArcPro) to create maps for presentation
- Accomplished at producing maps that give users information in an easy-to-understand format

- Determined and took into consideration the target audience before designing style of map to fit purpose
- Created posters and/or exhibits using ArcMap (or ArcPro)
- Converted maps, aerial photographs, and other materials into a digitized format
- Published datasets and created maps in ArcGIS Online
- Familiar with various types of maps: topographical, thematic, navigational, cadastral, general reference
- Worked with nominal, ordinal, interval, and ratio scales of data
- Knowledge of graphic representation techniques, including thematic mapping, multivariate displays, and web mapping
- Edited data to reflect changes presented by field data collection
- Researched and designed maps for storytelling
- Developed web maps, integrated field data with web maps, and established workflow from various data sources
- Familiar with OpenStreetMap's data model
- Read and interpreted maps to enter, edit, and update spatial and tabular data
- Edited vector/raster datasets
- Experience with integrating AutoCAD data into ArcGIS

Remote Sensing & Image Analysis
- Some exposure to remote sensing theory and Image Processing Systems (IPS)
- Found, obtained, and prepared remotely sensed data
- Processed high resolution imagery for analysis and basemaps
- Converted georeferenced video footage to ArcMap format

Research/Data Collection
- Gathered, processed, and documented geographic data
- Used Collector for ArcGIS to create a database
- Collected, analyzed, interpreted, and integrated spatial data from various sources and formats: maps, satellite imagery, censuses, geodetic surveys, ground and aerial photographs, data reports, GPS satellites, GIS data banks, etc.
- Conducted research to find datasets, including imagery, new GIS tools, etc.
- Knowledgeable about emerging geospatial industry and technology trends
- Conducted mapping research in the field and office
- Compiled survey data using xxx
- Collected GPS data and performed calculations using algebra, geometry and trigonometry
- Experience with GPS technology, field data techniques, data integration to a GIS, and troubleshooting of equipment and digital files
- Acquired and integrated a variety of field, image, vector, and attribute data to create, update, and maintain GIS databases
- Geocoded and georeferenced data
- Performed field data collection, digitizing, scanning, and data conversion
- Exported data from Trimble GPS handheld unit
- Validated new data and corrections against data provided by other sources

Analysis & Modeling
- Prepared data files in ArcGIS using analysis tools
- Performed basic GIS analyses and mapped the results
- Created, maintained, and QA/QC'd geospatial data sets using ArcGIS
- Performed statistical analysis of data and reported findings
- Conducted geospatial data migration and analysis on land titles (or ….)
- Ability to apply spatial and 3D analyses, and raster math within ArcGIS, while maintaining data integrity
- Performed geospatial analysis and created 2D and 3D datasets

- Ability to work with and improve templates and models
- Designed data models to fit data specifics
- Basic knowledge of mathematics, including statistics and quantitative and qualitative analyses
- General understanding of basic statistics and data analysis
- Completed various GIS analyses using vector, raster, and lidar data

Database Management
- Designed multi-software suite workflows for data manipulation
- Familiar with relational database set-up and management
- Updated and standardized GIS database for xxx
- Provided technical support to users regarding maintenance, development, and operation of GIS databases, equipment, and applications
- Edited and solved topological errors in geodatabase
- Created a database and set up queries
- Used ArcMap, Geodatabase Diagrammer, and MS Visio to create physical data models from file geodatabases
- Performed data transfer, analysis, mining, and inventory using Excel, Access, and ArcGIS attribute tables
- Knowledge and basic experience with ArcIMS, web applications, network analysis, and application development

Computer Programming/Application Development
- Familiar with GIS software design function
- Developed Python scripts and add-ins with the ArcPy module for ArcGIS
- Edited and ran automation scripts (Python, ArcPy, ModelBuilder)
- Ability to integrate GIS software with other software platforms
- Developed original scripts and tools within a GIS to process spatial data
- Proficiency in resolving errors with GIS programs and scripts

Project Management & Design
- Ability to manage ever-changing and competing priorities to meet project goals and objectives
- Met with users to define data needs, project requirements, required outputs, and to develop applications
- Facilitated the flow of data between several organization departments
- Assisted in management of data, maps, graphics, etc. as a project team member
- Conducted quality review of maps and data products
- Proven time management skills to independently prioritize tasks and meet deadlines

Documentation
- Helped prepare charts, reports, statements of work, plans, and presentations
- Produced presentations and written protocol of methods for reports
- Compiled, entered and documented geographic data and metadata
- Wrote documentation for datasets and analysis
- Developed and maintained operational and procedural documentation
- Performed source acquisition, analysis, documentation and archiving of digital and hardcopy data/maps
- Developed FGDC-compliant metadata to document geographic data sets
- Sorted and filed mapping jobs into department central filing system

Communication/Training/Industry Knowledge
- Ability to convey GIS/spatial information to non-GIS technical people
- Interacted with a diverse mix of subject matter experts across various program areas
- Collaborated with staff members from various departments on map projects, and participated in GIS project meetings

- Familiarity with multiple fields: biology, forestry, transportation, health, energy, agriculture, marketing, etc.
- Provided GIS training to organization's employees
- Trained users on ArcGIS Online site navigation
- Delivered presentations at workshops, seminars, fairs, shows, conventions, etc.
- Familiarity with codes of professional ethics and rules of conduct for geospatial professionals
- Awareness of legal issues, including property rights, liability, and public access to geospatial information
- Sensitivity to ethical issues, including privacy, geographic profiling, and inequities due to the "digital divide"
- Understanding of, and experience working with, diverse communities
- Translated GIS/map documents analysis results into Spanish (or Russian, German, etc.)
- Proficiency in written and oral communication in both Russian and English
- Bilingual (Vietnamese/English) and bi-culturally competent