

Cartographers and Photogrammetrists

SOC: 17-1021 • Career Profile Report

■ Key Facts

\$78,380 Median Salary	13,400 Employment	+6.0% Growth Rate
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■ Requirements & Salary Range

Education: Bachelor's degree

■ Automation Risk Assessment

Low Risk - 17.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

■ Work-Life Balance

8.6/10 - Excellent work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	8.2/10	Investigative	8.8/10
Artistic	6.4/10	Social	5.2/10
Enterprising	5.8/10	Conventional	6.6/10

■ Top Skills Required

Communication skills, Computer skills, Critical-thinking skills, Detail oriented, Problem-solving skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Cartographers and Photogrammetrists collect, analyze, and interpret geographic data **to create maps, charts, and 3D models of the Earth's surface**. They use aerial images, satellite data, and geographic information systems (GIS) to provide accurate spatial information. Their work is critical in urban planning, environmental management, navigation, and resource development.

This career is well suited for individuals who enjoy geography, technology, and working with spatial data.

What Do Cartographers and Photogrammetrists Do?

These professionals gather geographic data and produce maps and spatial models for various purposes.

Common responsibilities include:

- Collecting data from surveys, aerial photography, and satellite imagery
- Analyzing and interpreting geographic and spatial information
- Creating maps, charts, and visual representations of terrain and features
- Using GIS and mapping software to develop accurate spatial data
- Collaborating with engineers, planners, and researchers
- Updating maps to reflect changes in terrain, infrastructure, or political boundaries
- Ensuring data accuracy and adherence to mapping standards

Key Areas of Cartography and Photogrammetry

Professionals may focus on specific areas:

- Map Design and Production: Creating visual representations of geographic data
- Geospatial Analysis: Interpreting satellite or survey data for planning and decision-making
- Remote Sensing and Aerial Photography: Collecting data from aircraft or satellites
- GIS Integration: Using software to analyze, store, and display spatial data
- Data Accuracy and Standardization: Ensuring maps meet professional and regulatory standards

Skills and Abilities Needed

Cartographers and photogrammetrists combine technical, analytical, and design skills.

Core Professional Skills

Personal Qualities That Matter

Education and Career Pathway

This role typically requires formal education and technical training:

- Bachelor's Degree: Geography, cartography, GIS, surveying, or related fields
- Internships or Field Experience: Hands-on experience in mapping or geospatial analysis
- Professional Certification (optional): GIS or photogrammetry credentials
- Continuous Learning: Staying current with mapping technology, software, and geospatial techniques

Where Do Cartographers and Photogrammetrists Work?

They are employed across industries that require geographic data and spatial analysis:

- Government Agencies
- Environmental and Natural Resource Organizations
- Urban Planning and Engineering Firms
- Mapping and GIS Consulting Companies
- Research and Academic Institutions

Work environments may include offices, laboratories, field sites, or research centers.

Is This Career Difficult?

This career requires analytical, technical, and design skills. Professionals must ensure accurate mapping, interpret complex data, and adapt to new technology while meeting project standards.

Who Should Consider This Career?

This career may be a strong fit if you:

- Enjoy geography, mapping, and spatial analysis
- Have strong analytical and technical skills
- Are detail-oriented and accurate
- Can work with GIS, mapping software, and remote sensing tools
- Want a career that combines technology, science, and visual communication

How to Prepare Early

- Take courses in geography, mathematics, computer science, and GIS
- Gain experience with mapping software and spatial analysis tools
- Participate in fieldwork, surveys, or internships
- Develop skills in data visualization and cartography
- Stay informed on emerging geospatial technology and mapping standards

Cartographers and photogrammetrists transform geographic data into accurate, visually informative maps and models that support planning, navigation, and resource management.