[KE-02-028] Geospatial Conferences and Publications

Abstract

This entry describes the conferences and publications that facilitate the creation and transfer of geospatial knowledge in the academy and practice communities. The large number and variety of industry-led and topical conferences and workshops that serve and connect with specific audiences are described first. The attention then shifts to the geospatial publications starting with the top 50 academic journals that span geography, spatial sciences, and computer science domains. Their titles, starting dates, impact scores from 2023, publishers, and URLs are captured in a table and the largest of the three abovementioned groups of journals focused on the spatial sciences, are assigned to one of the geodesy and positioning, remote sensing, geographic information science, and cartography subdomains. The attention then shifts to some of the seminal books published in the past 2-3 decades and the roles of conference proceedings, magazines and newsletters, and web posts and blogs and the likelihood that nearly all these materials can be acquired and used in digital form nowadays.

Keywords: communication, community, community engagement, knowledge, knowledge economy, outreach

Author & citation

Wilson, J.P. (2025). Geospatial Conferences and Publications. The Geographic Information Science and Technology Body of Knowledge (Issue 2, 2025 Edition), John P. Wilson (Ed.). DOI: 10.22224/gistbok/2025.2.6.

Explanation

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1. Introduction

Geospatial conferences and publications take many forms and facilitate the transfer of knowledge in the academy and practice communities. There is also a large number and variety of industry-led and topical conferences organized annually to serve and connect with specific audiences, some examples of conferences and workshops focused on geographic information science and technology are described in Section 2. The geospatial publications include academic journals, books, conference proceedings, magazines, newsletters and web posts, and most of these publications can be accessed in digital form nowadays.

2. Conferences and Workshops

There are many geospatial conferences and workshops and the examples below focus on those that serve large audiences and have been running for some time.

The first is the annual ACM SIGSPATIAL International Conference in Geographic Information Systems series kicked off in 1993 and provides a forum for original research on conceptual, design and implementation aspects of geospatial data. This conference moves around the U.S. and the thirty-second conference will be staged in Minneapolis, MN in November 2025.

The second is the COSIT (Conference on Spatial Information Theory) biennial conference series which focuses on theoretical aspects of space and spatial information. This conference moves around the world and the sixteen conference was staged in Quebec City, Canada in September 2024.

The third is the International Conference on Advanced Geographic Information Systems, Applications, and Services (GEOProcessing) series covers geospatial and geoinformation fundamentals along with new trends in GIS technologies and research. This conference moves around Europe and the seventeenth edition was staged in Nice, France in May 2025.

The fourth is the Geospatial World Forum which supports a global gathering of geospatial professionals and leaders spanning public policy, national mapping agencies, the private sector, multilateral development agencies, scientific and academic institutions, and large end-users from government, businesses, and the public. The sixteenth edition of this conference, organized around the geospatial knowledge infrastructure, AEC (architecture, engineering and construction) and digital cities, defense and space infrastructure, location business intelligence, minerals and energy exploration, natural resource management, SDGs (Sustainable Development Goals), geoinformation capacity building, and geospatial technologies, was staged in Madrid, Spain in April 2025.

The host and sponsor of this last conference series, Geospatial World, a large geospatial communications and consulting firm based in Noida, India, stages a large number and variety of regional and thematic conferences in Europe, the Middle East, Asia, Australasia, Africa and the Americas every year.

The fifth is the flagship GIScience biennial conference series which draws participants from academia, industry, and government to discuss and advance the state-of-the-art in geographic information science, and the thirteenth edition was hosted by a collection of local universities in Christchurch, New Zealand in August 2025.

The sixth is the International Association of Chinese Professionals in Geographic Information Sciences (CPGIS) Conference on Geoinformatics series provides a platform for networking and exchanging new ideas and cutting-edge knowledge among diverse geospatial professionals worldwide. The location of this annual conference alternates between China and the U.S. and Canada, and the thirty-second edition was hosted by Huanghe Jiatong University in Jiaozuo, China in June 2025.

The seventh is the International Society for Photogrammetry and Remote Sensing (ISPRS) Congress series, held every four years since 1948 (with several prior to that year). The conference rotates across Europe, Asia, North and South America, with a primary focus in remote sensing and image engineering. The 2026 conference will be held in Toronto,

Canada. The ISPRS also hosts a number of smaller annual conferences with a variety of specialized themes, including sensor technologies and digital image processing.

The eighth is the International Geoscience and Remote Sensing Symposium (IGARSS) that serves as the flagship conference of the IEEE Geoscience and Remote Sensing Society (GRSS). This annual conference is organized around a specific theme each year and the forty-fifth edition staged in Brisbane, Australia in August 2025 focused on threats to our Earth and promote collaborative global solutions using remote sensing technologies.

The ninth is the annual University Consortium for Geographic Information Science (UCGIS) Symposium series that was launched in 1994 and provides a platform for sharing research, discussing emerging trends, and fostering collaboration within the academic GIScience community. This conference moves around the U.S. and the thirtieth conference was staged in Laramie, Wyoming in June 2025.

The tenth is the annual Association of Geographic Information Laboratories in Europe (AGILE) conference series that was launched in 1998 and prioritizes full papers, short papers, and posters on geographic information science. This conference moves around Europe and the 2005 conference was staged in Dresden, Germany.

The eleventh is the annual U.S. Geospatial Intelligence Foundation GEOINT Symposium that moves around the U.S. This conference primarily serves geospatial intelligence professionals and features keynotes, training, and technology showcases, and the twenty-second edition was staged in St. Louis, Missouri in May 2025.

A large number and variety of conferences hosted by private software and services companies and the open-source community. The annual Esri User Conference staged in San Diego, California for example, connects leaders, peers, and Esri experts and is the largest GIS event in the world. Bentley Systems' Year in Infrastructure and Trimble's Dimensions conference series brings global industry leaders together to showcase infrastructure delivery and performance excellence, exchange visionary ideas for the future, and connect users with experts each year. These and other geospatial software and services companies also host smaller specialty conferences, and they will often sponsor and participate in some of the abovementioned conferences as well. The open-source community is also served by large numbers of conferences and workshops, including the annual FOSS4G (Free and Open Source Software for Geospatial), OSM (Open Street Map) State of the Map, and the QGIS User conferences, that bring together the users and developers of open-source geospatial software and data.

And last, but not least, there are numerous scientific meetings, such as the Annual Meetings of the American Association of Geographers (AAG), American Geophysical Union (AGU), and European Geophysical Union (EGU), that feature novel and state-of-the-art geospatial methods and applications, and there are many specialist meetings on specific topics organized and hosted by universities, including the Spatial Analysis Research Center (SPARC) at Arizona State University and the Center for Spatial Studies and Data Science at the University of California Santa Barbara. Similarly, some conferences were omitted from this entry, notably the International Cartographic Conference (ICC) series staged by the International Cartographic Association and the North American Cartographic Information Society (NACIS) conference series, given their primary focus on cartography and visualization rather than geographic information science and technology.

3. Publications

3.1 Academic Journals

There are many academic journals that cover one or more aspects of spatial sciences and the list in Table 1 (below) points to 50 of the leading journals that focus on geography, spatial sciences, and computer science. The largest collection of spatial sciences journals spans four subdomains – geodesy and positioning, remote sensing, geographic information science, and cartography and visualization. The three domains and four subdomains used in Table 1 point to the role of each journal and in nearly every case the individual articles published in these journals will likely include material that touches on multiple domains and subdomains.

The two longest running journals – the ISPRS Archives of Photogrammetry, Remote Sensing, and Spatial Information Sciences and the Annals of the American Association of Geographers were founded in 1908 and 1911, respectively – and 37 of the 50 journals included in Table 1 (below) were launched in the twentieth century. In addition, many of the longest running journals have taken on new titles and publishers as the authors, subject-matter, and readers have evolved and the publishing industry has changed over time. The journal Cartography and Geographic Information Science, for example started with the title of The American Cartographer in 1974 and switched to its current title in 1990. The Journal of Spatial Sciences has perhaps the most convoluted history given it started with its current name in 2004 as a continuation of Cartography (which was published from 1954 to 2003) and Australian Surveyor (which was published as a standalone journal from 1928 to 2003) and following mergers with the Australian Journal of Geodesy, Photogrammetry, and Surveying (which was published as a standalone journal from 1979 to 1994) and Geomatics Research Australasia (which was published as a standalone journal from 1995 to 2024). There are too many examples to describe here but the digital platforms now used for publishing and sharing work means that we can find what we need with one or two keystrokes.

Table 1 also lists the 2023 impact factors for 48 of the 50 journals included in the table and these point to the relatively high impact factors for several of the remote sensing journals that can be attributed to the explosive growth in satellite remote sensing and the rise of the Internet of Things and sensors of all kinds. The geography and computer science journals included in Table 1 are broader and still play integral roles in publishing spatial work, and the geodesy and cartography journals have relatively low impact factors because they serve smaller communities today given that much of their work has been subsumed under the geographic information science subdomain.

The 50 journals, taken as a whole, point to the importance and breadth of spatial sciences and the ways in which different threads have been adopted and integrated into geographic information systems and services. The launch and successful operation of these journals provides numerous outlets for authors to share their work and a large body of work for those looking to learn more about spatial thinking, analysis and modeling in their various guises, and how these ways of gathering insights can inform and guide our understanding of Earth systems and human activities across space and time.

3.2 Conference Proceedings

There is a long history of publishing the papers presented at geospatial conferences as a collection of papers. The National Center for Geographic Information and Analysis (NCGIA), which played a pivotal role in accelerating the growth of the spatial sciences in the 1980s and 1990s, for example, sponsored four conferences focused on GIS and environmental modeling and these led to the rapid publication of three books describing new geospatial methods and use cases (i.e., Goodchild et al., 1993, 1996; Clarke et al., 2001).

The web affords new opportunities to publish conference proceedings quickly. Five of the conference series listed in Section 3.1 are compiled and shared via the ACM Digital Library (SIGSPATIAL International Conference in Geographic Information Systems series), and others are shared via the Cartography and Geographic Information Society (CaGIS) website (https://www.cartogis.org; the biennial AutoCarto conference series launched in 1974 which was renamed the CaGIS Conference in 2024), Copernicus Publications (the AGILE Conference series), the Leibniz International Proceedings in Informatics (LIPIcs) (the GIScience Conference series), the ThinkMind Digital Library (the International Conference on Advanced Geographic Information Systems, Applications, and Services series), and IEEE's Xplore platform (the International Association of Chinese Professionals in Geographic Information Sciences Conference on Geoinformatics series and the International Geoscience and Remote Sensing Symposium series).

3.3 Books

A large number and variety of books have been published on spatial topics to date and many played critical roles in the growth and evolution of the spatial sciences as an integral part of our digital world. The narrative below describes four groups of books that played prominent roles in the growth and evolution of the geospatial community during the past 30 years.

The first group is a series of books that described the growth and status of the spatial sciences at key moments. These books took various forms and are perhaps best presented by the two-volume set entitled "Geographical Information Systems: Principles and Applications" (Maguire et al., 1991) and the 15-volume set entitled "International encyclopedia of geography: People, the Earth, environment and technology" (Richardson et al., 2017). The latter included >1,000 entries authored by >900 scholars from >40 countries. These are but two examples and other prominent examples include a series of dictionaries (i.e., McDonnell & Kemp, 1996; Wade & Sommer, 2006), encyclopedias (i.e., Kemp, 2008; Shekhar et al., 2020), and handbooks (i.e., Wilson and Fotheringham, 2007; Nyerges et al., 2011; Croswell, 2022).

Most of the abovementioned works served the academic community and recently, Esri Press has published a series of books aimed at student and lay audiences, see Wright and Harder (2019, 2020, 2021) and Dangermond (2024) for examples. These books are full of color maps and images and use stories to explain how the spatial sciences can help to build a more sustainable and resilient world, among other things.

The second group is a series of textbooks that serve students at various levels. There are many introductory texts, such as Bernhardsen (2002), Bolstad and Manson (2022), Chang (2019), Chrisman (2003), Clarke (2011), DeMers (2008), Harvey (2015), Heywood et al. (2011), Longley et al. (2015), McHaffie et al. (2023) and Shellito (2023), and increasing

numbers of texts that focus on one or specific applications like the social sciences (i.e., Steinberg & Steinberg, 2005) or the environmental sciences (i.e., Petropoulos & Chalkias, 2024; Zhu, 2024). Many of the introductory texts were updated multiple times but only a few have editions that were released during the past 3-5 years. This last observation points to a changing of the guard (the early geographic information scientists retiring) and the changing ways in which we produce, share and consume information nowadays.

The third group is a series of books that describe how specific methods and data can be used to improve our understanding of the natural and built environments. Prominent examples include books describing spatial statistical methods (Fotheringham et al., 2002; Griffith, 2010; Griffith & Paelinck, 2013; Fotheringham et al., 2023), surface modeling (Wilson & Gallant, 2000; Hengl and Reuter, 2008; Yue, 2011; Wilson, 2018), spatial modeling for earth and environmental sciences (Pourghasemi & Gokceoglu, 2019), spatial data science (Wilson, 2024), and most recently, GeoAI (Gao et al., 2023). These books focus on the underlying concepts and principles and stop short of providing workflows in most instances.

The fourth and final group follows a more granular approach and leads the reader through workflows to accomplish various spatial tasks. Most of these books focus on specific software systems and in many instances, they provide detailed guidance and practice in using these software tools. There are many prominent workbooks that support ArcGIS Pro (i.e., Price, 2022; Law & Collins, 2024; Gorr & Kurland, 2025) and QGIS (i.e., Cutts & Graser, 2018; Menke, 2022), for example, and there is a growing tendency for authors to publish their workflows as Python notebooks or code snippets, on Github and other web platforms, as noted below.

3.4 Magazines and Newsletters

There are also numerous magazines and newsletters with a spatial focus. Some are published by vendors, including ArcNews which tells what’s new and exciting for those who use Esri’s spatial software and services and ArcUser which provides technology upgrades and uses cases for those using Esri’s technology. There are also magazines that cover a wider range of topics, including GIM International, which serves as a global magazine for geomatics professionals and covers news, events and job opportunities, and GW Prime, which provides a subscription-based platform that covers geospatial innovations and applications in the public, private and nonprofit sectors across the globe. Three of the abovementioned magazines are published in print and digital formats and the fourth (GIM International) is published and distributed digitally nowadays. One particularly popular online geospatial magazine, Directions Magazine, was first launched in 1998 but ceased publishing in 2023. Many of its webinars are still available online.

3.5 Web Posts and Blogs

The content pushed to the web and social media platforms has grown immensely over the past few decades and these outlets nowadays provide information from the geospatial industry and the public at large. They incorporate a wide swath of opinions, so it may take some time to find the information one needs and its authenticity. However, many of these outlets provide handy hints and workarounds for accomplishing specific tasks and commentaries about what works and what does not work well.

This said, Geoawesome, GeographyRealm, GISGeography, and GIS Stack Exchange can be

counted among the best information websites sharing geospatial information. Geoawesome (https://geoawesome.com/) provides a place for people who are interested in location technologies to share their passions, knowledge and expertise for all things geo(-spatial) using social media, events, and podcasts. The GeographyRealm (https://www.geographyrealm.com/) website covers new research and case studies using geographic, GIS and other geospatial technologies, and cartographic concepts and methods. The GISGeography (https://gisgeography.com/) blog offers geoinformatics, comprehensive guides and advice, and is supported by a team of GIS evangelists who are passionate about all aspects of GIS. The StackExchange site for GIS (https://gis.stackexchange.com/) is well-known for its technical content and question-answering community.

Turning next to blogs, most of the companies and non-profits that produce and share geospatial products and services provide blogs as part of their engagement with existing users and those searching for geospatial software and services. These include Esri (https://www.esri.com/arcgis-blog/overview/), Bentley Systems (https://blog.bentely.com/), CARTO (https://carto.com/), Geoserver (https://geoserver.org/), Google Maps (https://mapsplatform.google.com/resources/blog/), QGIS (https://blog.qgis.org/) and SketchUp (https://blog.sketchup.com/) blogs.

These same vendors and organizations also post information about their products, solutions, resources, open source, enterprise, and pricing (if appropriate) on GitHub, LinkedIn and other social media platforms. The various platforms serve different needs and the GitHub sites, which support existing users, can be found using the following links: Esri (https://github.com/esri), Bentley Systems (https://github.com/BentleySystems), CARTO (https://github.com/cartodb), Geoserver (https://github.com/geoserver/), Google Maps (https://github.com/googlemaps), QGIS (https://github.com/qgis), and SketchUp (https://github.com/sketchup).

4. Summary

The conferences and publications have grown in number and variety over the past 50 years. Two trends stand out. The first is the ways in which the geodesy and positioning, cartography and visualization, and photogrammetry and remote sensing have been merged or subsumed in some instances into geospatial science outlets. The second trend follows from the first trend because many of the conferences and publications today offer an informed vision about potential emerging themes (i.e., digital twins, spatiotemporal analysis, the use of GeoAI to detect latent earth features and to recognize geostatistical patterns, and intelligent searching and sorting very large spatiotemporal data stores).

Table 1. Fifty Leading Spatial Academic Journals by Domain and Subdomain: (1) Geography; (2A) Spatial Sciences - Geodesy and Positioning; (2B) Spatial Sciences - Remote Sensing; (2C) Spatial Sciences - Geographic Information Science; (2D) Spatial Sciences - Cartography and Visualization; (3) Computer Science.

Journal	Domain and Subdomain	Start Date	Impact Factor (2023)	Publisher	Publisher
ACM Transactions on Spatial Algorithm & Systems	3	2015	1.2	ACM (Association for Computing Machinery)	https://dl.acm.org/journal/tsas/
Annals of GIS	2C	1995	2.7	Taylor & Francis	https://www.tandfonline.com/journals/tagi20/
Annals of the American Association of Geographers	1	1911	3.2	Taylor & Francis	https://www.tandfonline.com/journals/raag21
Applied Geography	1	1981	4.0	Elsevier	https://www.sciencedirect.com/journal/applied-geography
Cartographica	2D	1965	0.7	University of Toronto Press	https://utppublishing.com/loi/cart
Cartography & Geographic Information Science	2C	1974	2.6	Taylor & Francis	https://www.tandfonline.com/toc/tcag20/
Computers and Geosciences	3	1975	4.4	Elsevier	https://www.sciencedirect.com/journal/computers-and-geosciences
Computers, Environment and Urban Systems	3	1980	7.1	Elsevier	https://www.sciencedirect.com/journal/computers-environment-and-urban-systems
Environment & Planning B: Urban Analytics & City Science	1	1974	2.6	SAGE Publications	https://journals.sagepub.com/home/EPB
European Journal of Remote Sensing	2B	1993	3.7	Taylor & Francis	https://www.tandfonline.com/journals/tejr20
Geocarto International	2C	1986	3.3	Taylor & Francis	https://www.tandfonline.com/journals/tgei20
Geographical Analysis	1	1969	3.3	John Wiley & Sons	https://onlinelibrary.wiley.com/journal/15384632
Geography Compass	1	2007	3.1	John Wiley & Sons	https://compass.onlinelibrary.wiley.com/journal/17498198
Geoinformatica	3	1997	2.2	Springer	https://link.springer.com/journal/10707
GeoJournal	1	1977	2.0	Springer	https://link.springer.com/journal/10708
Geomatica	3	1922	2.3	Elsevier	https://www.sciencedirect.com/journal/geomatica
Geo-spatial Information Science	2C	1998	4.4	Taylor & Francis	https://www.tandfonline.com/journals/tgsi20
GIScience and Remote Sensing	2B	1984	6.0	Taylor & Francis	https://www.tandfonline.com/journals/tgrs20
GPS Solutions	2A	1995	4.5	Springer	https://link.springer.com/journal/10291
IEEE Geoscience & Remote Sensing Letters	2B	2004	4.0	IEEE (Institute of Electrical and Electronics Engineers)	https://www.grss-ieee.org/publications/geoscience-and-remote-sensing-letters/
IEEE Transactions on Geoscience & Remote Sensing	2C	1963	7.5	IEEE	https://www.grss-ieee.org/publications/transactions-on-geoscience-remote-sensing/
International Journal of Applied Earth Observation & Geoinformation	2B	1999	7.6	Elsevier	https://www.sciencedirect.com/journal/international-journal-of-applied-earth-observation-and-geoinformation
International Journal of Cartography	2D	2015	1.4	Taylor & Francis	https://www.tandfonline.com/journals/tica20
International Journal of Digital Earth	2C	2008	3.7	Taylor & Francis	https://www.tandfonline.com/journals/tjde20
International Journal of Geographical Information Science	2C	1987	4.3	Taylor & Francis	https://www.tandfonline.com/journals/tgis20
International Journal of Remote Sensing	2B	1980	3.0	Taylor & Francis	https://www.tandfonline.com/journals/tres20
International Journal of Spatial, Temporal & Multimedia Information Systems	3	2016	--	Inderscience Publishers	https://www.inderscienceonline.com/toc/ijstmis/1/1
ISPRS International Archives of Photogrammetry, Remote Sensing & Spatial Information Sciences	2B	1908	--	Copernicus GmbH	https://www.isprs.org/publications/archives.aspx
ISPRS International Journal of Geo-Information	2C	2012	2.8	MDPI (Multidisciplinary Digital Publishing Institute)	https://www.mdpi.com/journal/ijgi
ISPRS Journal of Photogrammetry & Remote Sensing	2B	1938	12.7	Elsevier	https://www.sciencedirect.com/journal/isprs-journal-of-photogrammetry-and-remote-sensing
Journal of Applied Remote Sensing	2B	2007	1.4	SPIE (International Society for Optics & Photonics	https://www.spiedigitallibrary.org/journals/journal-of-applied-remote-sensing
Journal of Geodesy	2A	1976	3.9	Springer	https://link.springer.com/journal/190
Journal of Geographical Systems	1	1999	2.8	Springer	https://link.springer.com/journal/10109
Journal of Location Based Services	2C	2007	1.2	Taylor & Francis	https://www.tandfonline.com/journals/tlbs20

Journal	Domain and Subdomain	Start Date	Impact Factor (2023)	Publisher	Publisher
Journal of Maps	2D	2005	1.9	Taylor & Francis	https://www.tandfonline.com/journals/tjom20
Journal of Spatial Information Science	2C	2010	1.8	--	https://josis.org/index.php/josis
Journal of Spatial Science	2C	1928	1.0	Taylor & Francis	https://www.tandfonline.com/journals/tjss20
Journal of Surveying Engineering	2A	1956	1.8	ASCE (American Society of Civil Engineers)	https://ascelibrary.org/journal/jsued2
Marine Geodesy	2A	1977	2.0	Taylor & Francis	https://www.tandfonline.com/journals/umgd20
Navigation	2A	1946	1.9	ION (Institute of Navigation)	https://www.ion.org/navi/
Photogrammetric Engineering & Remote Sensing	2B	1934	1.0	ASPRS (American Society for Photogrammetry & Remote Sensing)	https://my.asprs.org/pers
Photogrammetric Record	2B	1953	2.1	John Wiley & Sons	https://onlinelibrary.wiley.com/journal/14779730
Remote Sensing	2B	2009	4.2	MDPI	https://www.mdpi.com/journal/remotesensing
Remote Sensing for Environment	2B	1969	11.1	Elsevier	https://www.sciencedirect.com/journal/remote-sensing-of-environment
Spatial Cognition & Computation	3	1999	1.6	Taylor & Francis	https://www.tandfonline.com/journals/hscc20
Spatial Statistics	2C	2012	2.1	Elsevier	https://www.sciencedirect.com/journal/spatial-statistics
Survey Review	2A	1931	1.2	Taylor & Francis	https://www.tandfonline.com/journals/ysre20
The Cartographic Journal	2D	1987	1.0	Taylor & Francis	https://www.tandfonline.com/journals/ycaj20
The Professional Geographer	1	1949	1.5	Taylor & Francis	https://www.tandfonline.com/journals/rtpg20
Transactions in GIS	2C	1996	2.3	John Wiley & Sons	https://onlinelibrary.wiley.com/journal/14679671

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