Open Source Geospatial Science, Software and Education

A special issue of Transactions in GIS

Special issue information:

The last decade has seen a rapid growth in open source geospatial software and data developments. **Open geospatial data** applies the principles of free and openness to geospatial information, allowing communities to collaborate on a data product. Applying the lessons learned in the open source industry to geo-data collection and maintenance has led to a new generation of data products. This is more than publishing information for free access. Open data provides a mechanism for participants to contribute change back as equal partners in data collection and review. Examples of successful open geo-data platforms include OpenStreetMap and Natural Earth, to name a few.

Open Education applies the principles of open source to the creation of teaching materials allowing organizations to share syllabus materials with the aims of cost reduction and reaching a wider audience. Promoting collaboration is central to open education. As the Open Education Consortium says: "sharing is probably the most basic characteristic of education: education is sharing knowledge, insights and information with others, upon which new knowledge, skills, ideas and understanding can be built."

Free and Open Source Geospatial Software address the design, implementation, characterization and use of free tools for geospatial and environmental analysis, mapping, remote sensing and spatial information science. Open standards are the key to developing sustainable software. Open standards promote interoperability between applications, organizations and fields of endeavour. Open standards are key tools allowing geospatial practitioners to work together, with the added benefit of avoiding technology lock-in.

Finally, **Open Science** combines these ideas to better realize research objectives, by both sharing the data used to support a conclusion, alongside the open source software used for analysis. This leads to the development of innovative concepts and standards based on free and open source software for scientific global inter-disciplinary research, as well as for education and business projects.

We invite original research contributions on all aspects of open source geospatial science, software and education as well as its applications, and particularly encourage submissions focusing on the following themes for this Special Issue.

- Architectures and frameworks for open source software and data
- The use of open source geospatial software and data, in and for scientific research
- Open source implementations and Open SDI
- Use of Open Data and Big Data in research projects
- Open Geospatial Data quality
- Open Source Geospatial Software and Services

- Open Geospatial Standards
- Crowdsourced Geographic Information and VGI
- Teaching geospatial sciences with open source solutions and open data
- Open Source GIS application use cases: environment, climate change, health, energy, government, participatory GIS, location based services, etc.

Important Dates

Abstracts Due: 30/11/2021 (by email to: a.mobasheri@uni-heidelberg.de with cc'ing amin.mobasheri@gmail.com)
Approved Abstracts: 10/01/2022 (put as planned papers online)
Manuscripts Due: 30/06/2022
Decision to Authors: 31/08/2022
Final Papers Due: 31/12/2022

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Research interests:
Open Geospatial Data, Software and Standards, Data Quality, VGI and Crowdsourced Data, GIScience for urban and environmental studies

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Research interests:
GIS, 3D GIS, 3D Modeling, Computational Geometry, Open Geospatial Software and Standards

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Research interests:
Open Source GIS, Open access education, Geovisualization and tangible interfaces, Surface modeling and analysis, Hydrologic and erosion modeling

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Geoinformatics, Remote Sensing, Open Source GIS, Open Data

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Research interests:
Open Data and Open Source GIS, Urban Planning, Urban Informatics