Annual Report on the Spatial Data Lab project 2023

DATA COLLECTIONS

The project team maintains the datasets on Harvard Dataverse monthly. Up to November 2023, global users from 150 countries have downloaded all shared datasets on Harvard Dataverse more than 1,800,000 times. The team has crafted various tools rooted in workflows, enabling users to easily tap into external datasets hosted on platforms like Harvard Dataverse, GitHub, China Geo-Explorer database, and KNIME Hub . Notably, besides existing noes on US Census data and Open Street Map and Harvard Dataverse extension.

TOOL DEVELOPMENT

Since the first release of GEOSPATIAL ANALYTICS EXTENSION FOR KNIME 1.0 On December 6, 2022, the 1.2 release of the Geospatial Extension on September 27,2023 now supports the experiments detailed in the first KNIME workbook for GIS, Computational Methods and GIS Applications in Social Science - Lab Manual. It was developed by the Spatial Data Lab as a joint effort by the Center for Geographic Analysis at Harvard, KNIME, and Future Data Lab. We are in the process of designing more open data nodes within the upcoming 1.3 release , which will empower users to access rich datasets, such as the Socrata API data, GDELT Geo API ,Open Sky Network and the ArcGIS Living Atlas. More nodes for Spatial Statistic Model in GeoDa will be added as well.

WORKFLOW-BASED CASE STUDY DEVELOPMENT

Beyond the existing workflows published in Harvard Dataverse, The dataset and 34 workflows for the first KNIME workbook for GIS, Computational Methods and GIS Applications in Social Science - Lab Manual, were open accessible in the Geospatial Space of in the KNIME Hub since Oct 15,2023. This is a companion book to the main text with case studies implemented in ArcGIS Pro: "Computational Methods and GIS Applications in Social Science, 3rd Edition .

WORKSHOPS AND SEMINARS/ WEBINAR

In collaboration with FDL affiliate labs, the team has successfully orchestrated a monthly webinar series on Spatiotemporal Innovation since March 2023. This summer, from July 10-15, the team organized A five-day workshop titled Summer Workshop on Spatiotemporal Innovation was held from July 10-15 with attendees from North America, Europe, Asia, and Africa. Immediately following the workshop, a two-day Symposium on Spatiotemporal Data Science was held from July 15-16. Roughly 70 participants from 15 different countries graced the symposium. The symposium highlighted discussions centered around replicable spatiotemporal data science. Topics covered included big data analysis, open-source tool development, GeoAI, machine learning, workflow creation, cloud computing, and numerous application fields like public health, environmental science, urban studies, climate change, and social equality, among others.

NETWORK AND CAPACITY DEVELOPMENT ESTABLISHMENT OF THE AFFILIATE LABS

The Spatial Data Lab project is fervently aiding the expansion of Future Data Lab's affiliate laboratories. At present, 11 such affiliate labs are reaping the advantages of this support. Following the conclusion of the symposium, we have also established extensive connections with the participants to further the advancement of the Affiliate labs in Africa and promote initiatives related to blockchain data research.

Publication List

See details on the SDL website.