

SPATIAL DATA HANDLING SOFTWARE: A VIEW FROM A UNIVERSITY GEOGRAPHY  
DEPARTMENT

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The use of the digital form of spatial data has been progressing more rapidly than the ability of many universities to marshal resources to put modern tools in the hands of students. Spatial data handling tools are important as general support for geographers and others undertaking research or participating in learning activities at undergraduate and graduate levels. The instruction about spatial data learning using digital technologies is a specialized part of curricula in many academic institutions.

Today, however, only a few geography departments have extensive support facilities or personnel to achieve both of these goals. Skilled graduates are being attracted to jobs in industry rather than academe; well equipped laboratories for spatial data handling are not numerous; and software representative of the current state-of-the-art is present in only a small proportion of academic geography departments. It is unlikely that business enterprise will create computer packages or libraries in spatial data handling akin to the widely used statistical analysis packages like SPSS, MINITAB, or SAS.

There is here a challenge, then, for universities to collaborate on the development of libraries of algorithms and computer programs that may be useful for educational purposes, general and specialized, in many institutions. Software for supporting student and faculty research could take the modern conversational form, for example, a MINITAB approach to the older spatial data handling packages like GEOSYS or FLOW. Specialized functionality, for supporting courses like geographic information systems or automated cartography, could take the form of transportable libraries of routines that would demonstrate principles such as line generalization, triangulated irregular networks, or interactive choropleth map design.

A review of spatial data handling software suggests that much remains to be done, but that the advent of lower cost hardware and other technological developments hold promise for the creation of a widely available "GEOPACK". This facility could have tools for handling point, line, area, network, grid cell, and volume data types, and allow for data capture, storage, manipulation, management, and display of spatial features and their attributes, including capabilities for analysis and modelling.