

Software for learning and teaching geostatistics

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The purpose of this page is to **suggest software and shareware for learning and teaching geostatistics**. These are suggestions only which are based on my own personal experience only. The software mentioned here are described in more details in the Software section of the AI-GEOSTATS web site. This page has been developed for those who are beginning to work in spatial data analysis, the tools have been selected on the basis of their cost, ease of use and the quality of the associated information (online help or manual).

Purpose	Software & Platform	Description
Learning/teaching geostatistics. Spatial correlation analysis only. 2D	Variowin (free) Windows	<p>Having a perfect understanding about the way one should analyze and model the spatial correlation between geostatistical data is certainly one of the main keys for a successful geostatistical case study. Variowin has become the standard tool for spatial correlation analysis.</p> <p>The success of the software is mainly based on the high levels of interactivity that are offered to the user, and this at all the stages of the study: from the display of the pairs of points on a map to the final modeling of the experimental variogram. Last but not least, the software allows the analysis of several variables (cross-variography).</p> <p>The software was sold with a book about the analysis of spatial data in 2 D. This book replaced the original online help which was initially developed for learning and teaching purposes. Because the book is currently out of print, the software has been made available free of charge. This is a good news ... except that the understanding of the outputs generated by the software might be a bit difficult for those who are new in the field: no help is available anymore.</p> <p>Limits: - limited to the spatial correlation analysis and the variogram modelling</p>

<p>Learning/teaching geostatistics. Other methods are also available.</p> <p>General primary analysis of spatial data</p> <p>2D</p>	<p>E{Z} Kriging</p> <p>(free)</p> <p>Windows</p>	<p>Written by Dennis J.J. Walvoort</p> <p>The program makes it easier for students without a mathematical background to explore the world of kriging. By dragging points and sliding the sliders, students will learn features like:</p> <ul style="list-style-type: none"> - the screening effect (negative weights), kriging as a non-convex interpolator; - the declustering effect; - the effect of upscaling (block-kriging); - the impact of variogram shape, nugget, sill and range on the estimations, - how kriging can be turned into a nearest neighbour interpolator or a local mean interpolator; - etc
<p>Learning/teaching geostatistics.</p> <p>Primary uni/multivariate geostatistical analysis of the data</p> <p>2D</p>	<p>GeoEAS</p> <p>(free)</p> <p>DOS, Windows or Unix</p>	<p>GEOEas is certainly the most famous geostatistical package with GSLIB (most geostats software have the possibility to read "geoeas" files). Going in a systematic way through all the steps required in geostatistics (primary statistics, spatial correlation analysis, variogram modeling, interpolation with kriging and cross validation), it has also a clear manual which can be downloaded in various format (postscript and adobe acrobat format). Since it is a standard tool known by all geostatisticians, to become familiar with this tools is certainly a good start. The UNIX version (SUN only if I remember well) has an additional interface with XGobi which improves the visualization of the data. It can also handle more data and variables than the DOS version. An add on module for cokriging (multivariate geostatistics) is available from the ftp site.</p> <p>Limits:</p> <ul style="list-style-type: none"> - poor outputs - lack of interactivity for exploratory variography - the GUI is quite good for a DOS program but it certainly deserves a windows version.