Mixing Methods and Triangulating Results to Study the Influence of Panning on Map Users' Attentive Behaviour

Kristien Ooms, Lien Dupont & Lieselot Lapon

Abstract

Historical enclosure era property-related maps can tell us a great deal about the life and times of communities in the past. This study offers a unique approach to studying the historical landscape by applying GIS techniques to the examination of an eighteenth-century English village. Using novel GIS applications relying on historical maps, the study explores various aspects of the village's physical and social characteristics. In doing so, the study forges effective linkages between cultural and landscape variables to reveal aspects of the historical landscape in eighteenth-century Britain previously inaccessible to researchers. This, in turn, provides a much more comprehensive and sophisticated template for future use by historical geographers in a number of contexts.

Online Survey of Heterogeneous Users and Their Usage of the Interactive Mapping Platform WorldMap

Alenka Poplin, Wendy Guan & Ben Lewis

Abstract

The long sequence of Pigot's plans of Manchester and Salford is used to test the concept that the dates of churches and chapels can be used as a valuable indicator of the completeness of the coverage of large-scale nineteenth-century town plans. The approach appears to hold some promise and suggests that Pigot's plans were surprisingly comprehensive. This may reflect not merely his drawing on existing surveys but, more interestingly, may be the incidental product of collecting data for his town directories. The methodology could usefully be extended to explore the value of directory plans of other towns.

Colour Hue and Texture Evaluation for 3D Symbolization of Indoor Environments Using RGB-D Data

Sebastián Patricio Dueñas Oviedo, Luciene Stamato Delazari & Daniel Rodrigues dos Santos

Abstract

The paper describes a localization of Müller's maps of regions of Bohemia from 1712 to 1718. Original maps represent the territories within regional boundaries in approximate scale 1: 100 000. It is relatively problematic to extract spatial information from the maps based on precise geodetic control and well-known cartographic projection. A different approach must be chosen in case of old maps without geodetic control and identifiable cartographic projection. In such a case the identical points whose coordinates in the reference coordinate system are known must be identified in the old map and their cartometric coordinates measured. This is also the case of manuscript Müller's maps. For creation of a transformation key the suitable input data must be selected. As the most frequented features on these maps are settlements it was decided to use this part of planimetric component. Several ways how to use the settlements for transformation were explored in order to find out the most appropriate way of localization of these rare old maps. For

purpose of old maps localization the database of settlements (DBS) was used. This database is based on the Territorial Identification Register of Basic Settlement Units (TIR-BSU) which has been created in 1992–2004 and contains current coordinates of settlements. Furthermore, after transformation, the analysis of the visualization accuracy of watercourses was done.

Exploiting Illusory Grid Lines for Object-Location Memory Performance in Urban Topographic Maps

Frank Dickmann, Dennis Edler, Anne-Kathrin Bestgen & Lars Kuchinke

Abstract

A good seabed representation is one of the important characteristics of any navigational chart. Along with depth contours and coloured depth areas, soundings are used for this task. All the soundings on a navigational chart are selected for a reason. Soundings contribute to the navigational chart safety aspect by alerting to all the threats and dangers. They also show all the attributes of a seabed relief without overcrowding it, thus maintaining the overall chart quality. Soundings are selected from a hydrographic survey and since it consists of a vast number of data, the process of sounding selection is a challenging and demanding task. It requires experience and knowledge from the nautical cartographer and is mostly done manually. Some types of software nowadays provide an automatic selection feature. This paper analyses a process of automatic sounding selection in the dKart Editor software. On the Croatian side of the Adriatic Sea, Šibenski Kanal (Šibenik channel) and Kanal Sv. Ante (St. Ante's channel) are used as the study area. A hydrographic survey of the area represents the input data. The official navigational chart of the surveyed area is used as the basis for determining three different sets of parameters for the selection process. After the selection, obtained results are assessed based on geometrical accuracy and on the conservation level of navigational safety. For geometrical accuracy, the best results were produced by the third set that was divided in two subsets for each channel. It was determined that the nature of the seabed relief had an impact on the selection process. The same set had the best result for navigational safety assessment but it was concluded that all the sets undermined the aspect. Because of these crucial shortcomings noticed in all the tested sets of parameters, the feature is considered inadequate for serious usage as a completely automatic tool for the process of sounding selection on navigational charts.

A Comparative Study of Various Supervised Learning Approaches to Selective Omission in a Road Network

Qi Zhou & Zhilin Li

Abstract

On the basis of initial studies devoted to a better understanding of how the public user (a pedestrian in the city) perceives cartographic symbols in the mobile augmented reality system, we present an attempt to determine the threshold values of differentiation for three visual variables. The variables of *size*, *transparency*, *and focus* were implemented into image point symbols representing five types of objects. The set of symbols was designed in accordance with the rules of cartographic design taking into consideration an analysis of 19 professional tourist works. The symbols were presented on the screen of a mobile device in a system imitating the augmented reality system against four different backgrounds: white, a wall, and two typical urban landscapes. The results of an internet survey conducted using a tablet at four locations in Poznan (Poland) allowed us to determine the following: threshold differentiation values for the analysed variables, indication of the dependence on the type of background displayed on the mobile device in augmented reality, and the advantage of using a combination of visual variables.

Adaptive Multi-Scale Population Spatialization Model Constrained by Multiple Factors: A Case Study of Russia

Lujin Hu, Zongyi He & Jiping Liu

Abstract

Dot maps are one of the best ways to visualize absolute values in thematic cartography. Dots represent quantitative data on a map. Population is often used in this type of representation. This paper presents a population dot density map for

the year 2011 on two scales: (1) for mainland Portugal, and (2) for the Lisbon and Oporto regions. We have used dots with constant values and sizes at the most detailed statistical level (i.e. statistical subsection) for localities with less than 5000 inhabitants, and proportional circles for localities with more than 5000 inhabitants. These two scales of analysis coupled with two cartographic representation techniques used on a single map allow for a clear reading of the distribution of population.