MULTI-SCALE DEEP NEURAL NETWORK LULC CLASSIFICATION USING REMOTE SENSING DATA AND R SOFTWARE

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ABSTRACT

Land Use/ Land Cover (LULC) map can be extracted from Remote sensing (RS) data in pixel-based or object-based approach. Deep neural network algorithms, which learn the representative and discriminative features in a hierarchical manner from the data have been applied for RS data analysis, including LULC classification. R is the free software environment for statistical computing and graphics which provides Keras package - a high level neural networks API develop which a focus on enabling fast experimentation. In this study, a deep neural network in Keras using Mini-batch gradient descent optimizer is explored to establish LULC maps in from multi-spectral RapidEye imagery in pixel-based and object-based approaches.

BUILDING MANAGEMENT AND EXPLOITATION NATURAL DATA WEBGIS BY OPEN SOURCE TECHNOLOGY

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ABSTRACT

Data has always been an important part in the development of human society. Especially spatial data play not only an important role in the field of geography but also the others. However, these data are often collected, constructed and stored in various forms which cause some inadequacies such as wasting resources, money and time; difficulties in data management; limitations in the exchange and data connection.

In addition, the combination of Internet and GIS has created a new breakthrough in the management and exploitation of data. Therefore, building a WebGIS system to support management and data mining has become an urgent need and an indispensable direction in the development of science and technology of geography. Through this system, data stored in a new way with multi-user not only solve the problems mentioned above but also make the management and exploitation data easier, simpler and more convenient.