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Deep convolutional neural network to predict ground water level
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Abstract
In contrast to the atmosphere and fresh surface water, which can only briefly store water, the natural water cycle may use groundwater as a "reservoir" that stores water for extended periods. Even though there is a considerable degree of variation and complexity in the subsurface environment, there is a minimal availability of data from the field. Both of these challenges were faced by those who used models that were based on actual reality. Statistical modelling gradually improved the accuracy of the model's calibration. Groundwater has become an increasingly important resource for supplying the water requirements of a rising global population. The fact that there is such a large stockpile allows it to be used once again, even during dry seasons or droughts. This article presents a deep convolutional neural network-based model for predicting groundwater levels. As part of the experimental setup, 174 satellite pictures of groundwater are included in the input data set. Images are preprocessed using the CLAHE method. The CNN, SVM, and AdaBoost methods make up the classification model. The results have shown that CNN can classify things correctly 98.5 per cent of the time. Precision and Recall rate of Deep CNN is also better for ground water image classification. © 2023, The Author(s), under exclusive licence to Korea Spatial Information Society.

Author Keywords
Deep convolutional neural network; Environment Monitoring System; Ground water level prediction; Satellite images

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