

## Secure Image Retrieval Based on Orthogonal Decomposition under Cloud Environment

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**Abstract :** In order to protect data privacy, image with sensitive or private information needs to be encrypted before being outsourced to the cloud. However, this causes difficulties in image retrieval and data management. A secure image retrieval method based on orthogonal decomposition is proposed in the paper. The image is divided into two different components, for which encryption and feature extraction are executed separately. As a result, cloud server can extract features from an encrypted image directly and compare them with the features of the queried images, so that the user can thus obtain the image. Different from other methods, the proposed method has no special requirements to encryption algorithms. Experimental results prove that the proposed method can achieve better security and better retrieval precision.

**Keywords :** secure image retrieval, secure search, orthogonal decomposition, secure cloud computing

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