In this paper we introduce imageFARMER, a framework that allows information retrieval researchers and educators to develop and customize domain-specific content-based image retrieval systems with ease while developing a deeper understanding of the underlying representation of domain-specific image data. imageFARMER incorporates different aspects of image processing and content-based information retrieval, such as: image representation via image parameter extraction, validation via image parameters, analysis of multiple dissimilarity measures for accurate data analysis, testing of dimensionality reduction methods for storage and processing optimization, and indexing algorithms for fast and efficient querying. The unique capabilities of this framework have not been available together as an open-source software package designed for research, while offering enhanced knowledge discovery and validation of all steps involved when creating large-scale content-based image retrieval systems.


**Index Terms**

Computer Science  
Image Processing

**Keywords**

Content-based image retrieval retrieval attribute evaluation dimensionality reduction.