

2009

# Selection of the Proper Compact Composite Descriptor for Improving Content based Image Retrieval

Chatzichristofis, Savvas A.

ACTA Press, Canada

---

<http://hdl.handle.net/11728/10149>

*Downloaded from HEPHAESTUS Repository, Neapolis University institutional repository*

**Proceedings of the 6th IASTED International Conference  
Signal Processing, Pattern Recognition, and Applications (SPPRA 2009)  
February 17-19, 2009 Innsbruck, Austria**

**SELECTION OF THE PROPER COMPACT COMPOSITE DESCRIPTOR FOR  
IMPROVING CONTENT BASED IMAGE RETRIEVAL**

Savvas A. Chatzichristofis  
Department of Electrical &  
Computer Engineering  
Democritus University of Thrace,  
Xanthi, Greece  
[schatzic@ee.duth.gr](mailto:schatzic@ee.duth.gr)

Yiannis S. Boutalis  
Department of Electrical &  
Computer Engineering  
Democritus University of Thrace,  
Xanthi, Greece  
[ybout@ee.duth.gr](mailto:ybout@ee.duth.gr)

Mathias Lux  
Institute of Information Technology  
Klagenfurt University  
Klagenfurt, Austria  
[mlux@itec.uni-klu.ac.at](mailto:mlux@itec.uni-klu.ac.at)

**ABSTRACT**

Compact Composite Descriptors (CCD) are global image features capturing both, color and texture characteristics, at the same time in a very compact representation. In this paper we propose a combination of two recently introduced CCDs (CEDD and FCTH) into a Joint Composite Descriptor (JCD). We further present a method for descriptor selection to approach the best ANMRR that would result from CEDD and FCTH. With our approach the most appropriate descriptor in terms of maximization of information content can be found on a per image basis without knowledge of the data set as a whole. Experiments conducted on three known benchmarking image databases demonstrate the effectiveness of the proposed technique.

**KEY WORDS** Compact Composite Descriptors, CBIR, Selection of the proper descriptor, Fuzzy techniques