Abstract

This paper presents discrete curvelet transform (DCvT) based block level handwritten script
identification. The conventional two-dimensional (2-D) discrete wavelet transforms (DWTs),
de-emphasizes directional discriminating properties such as curves, lines and edges of the
texture under study and whereas discrete curvelet transform (DCvT) efficiently extracts
directional selective features. Typically it can be observed that the patterns of any handwritten
text blocks encompass directionally dominant texture primitives. Therefore, the primary aim of
this paper is to show the efficiency of discrete curvelet transform (DCvT) in describing the
handwritten text blocks of six Indian scripts. Exhaustive experimentations were conducted on
a large dataset with various combinations of scripts. For instance, average script classification
accuracy achieved in case of bi-scripts and tri-scripts combinations are 94.19% and 95.24%
respectively.

References

- Judith Hochberg, Patrick Kelly, Timothy Thomas, Lila Kerns, "Automatic Script
  Identification From Document Images Using Cluster-Based Templates", IEEE
  No. 1, 2012.
- Basavaraj Patil, N. V. Subbareddy, "Neural network based system for script
- B. V. Dhandra, Mallikarjun Hangarge, "Offline Handwritten Script Identification in
- Gopal Datt Joshi, Saurabh Garg, Jayanthi Sivaswamy, "Script Identification from
- D Dhanya, A G Ramakrishna, Peeta Basa Pati, "Script identification in printed
- G. G. Rajput, Anita H. B, "Handwritten Script Recognition using DCT an Wavelet
  Features at Block Level", IJCA Special Issue on Recent Trends in Image Processing and
  Pattern Recognition, RTIPPR, 2010.
- Mallikarjun Hangarge, Gururaj Mukarambi, B. V. Dhandra, "South Indian Ha.
  ndwritten Script Identification at Block Level from Trilingual Script Document Based on Gabor
  Features", Multimedia Processing, Communicating and Computing Applications, Lecture
  Notes in Electrical Engineering 213.
- M. J. Fadili, J. L. Starck, "Curvelets and Ridgelets", October 24,
- Lindsay Semler, Lucia Dettori, "Curvelet-Based Texture Classification Of Tissues In
Script Identification using Discrete Curvelet Transforms


Index Terms

Computer Science
Pattern Recognition

Keywords
Bilingual, Trilingual, Multilingual, Script Identification, Curvelet Transform, Nearest Neighbor Classifier, Texture Features.