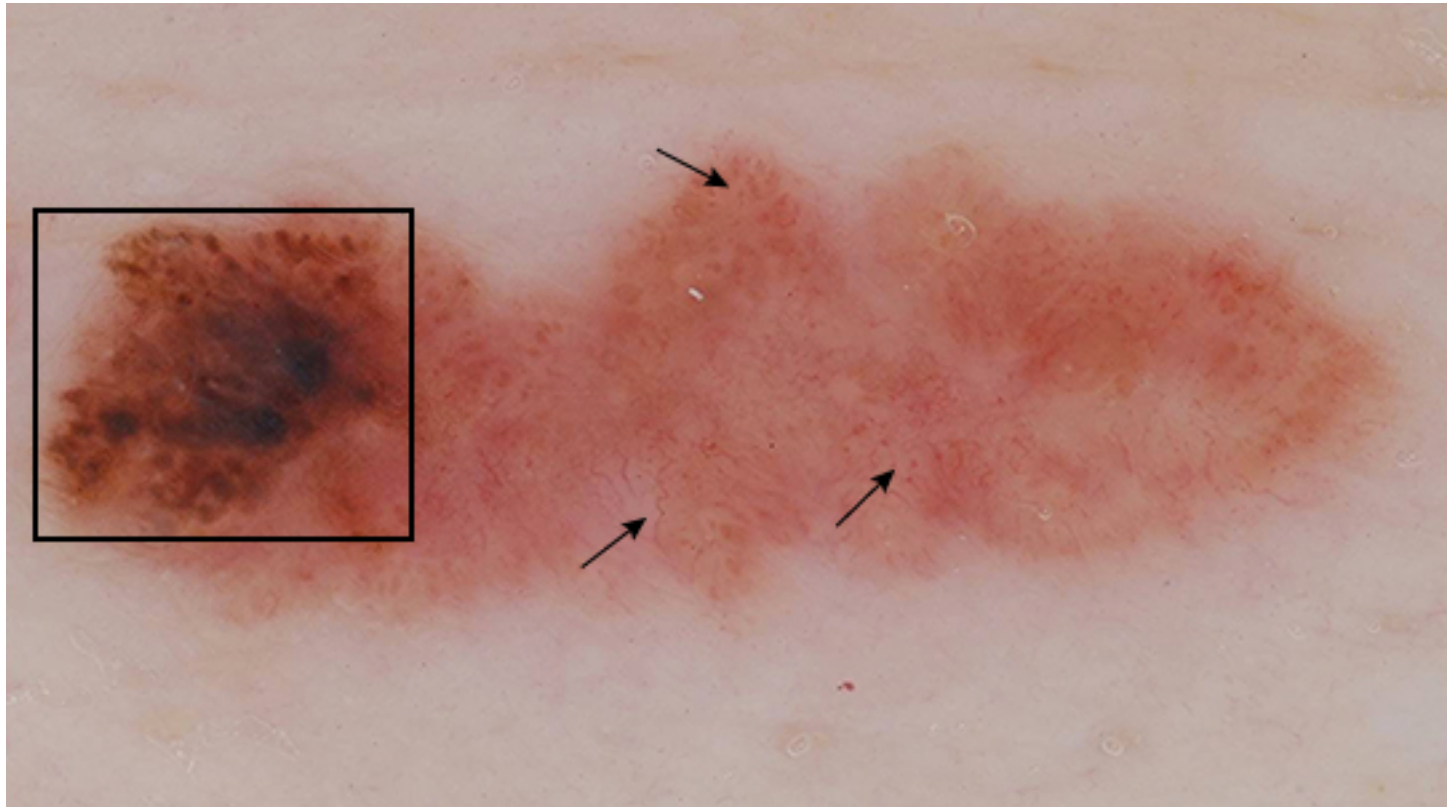
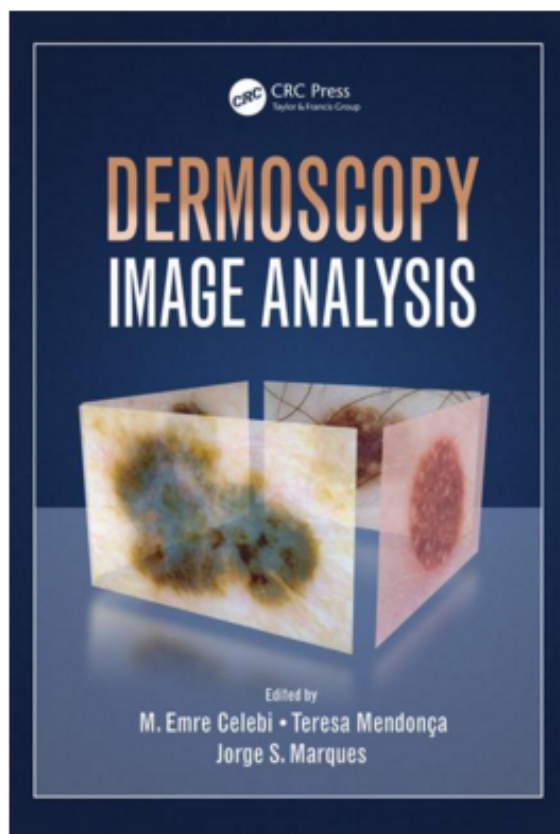


Current Methods in Dermoscopic Image Analysis



- There is a growing body of literature focused on the analysis of dermoscopic images
- The current literature in this arena has recently been summarized in the textbook *Dermoscopy Image Analysis (see next slide)*
- For the purposes of this challenge, a synopsis of the above textbook and recent literature has been prepared (see following slide)



October 16, 2015 by CRC Press

Reference - 470 Pages - 185 Color & 655 B/W Illustrations

ISBN 9781482253269 - CAT# K23910

Series: [Digital Imaging and Computer Vision](#)

Features

- Summarizes the state of the art of the computerized analysis of dermoscopy images
- Covers dermoscopy image analysis from preprocessing to classification
- Explores future directions for this exciting subfield of medical image analysis

Summary

Dermoscopy is a noninvasive skin imaging technique that uses optical magnification and either liquid immersion or cross-polarized lighting to make subsurface structures more easily visible when compared to conventional clinical images. It allows for the identification of dozens of morphological features that are particularly important in identifying malignant melanoma.

Dermoscopy Image Analysis summarizes the state of the art of the computerized analysis of dermoscopy images. The book begins by discussing the influence of color normalization on classification accuracy and then:

- Investigates gray-world, max-RGB, and shades-of-gray color constancy algorithms, showing significant gains in sensitivity and specificity on a heterogeneous set of images
- Proposes a new color space that highlights the distribution of underlying melanin and hemoglobin color pigments, leading to more accurate classification and border detection results
- Determines that the latest border detection algorithms can achieve a level of agreement that is only slightly lower than the level of agreement among experienced dermatologists
- Provides a comprehensive review of various methods for border detection, pigment network extraction, global pattern extraction, streak detection, and perceptually significant color detection
- Details a computer-aided diagnosis (CAD) system for melanomas that features an inexpensive acquisition tool, clinically meaningful features, and interpretable classification feedback
- Presents a highly scalable CAD system implemented in the MapReduce framework, a novel CAD system for melanomas, and an overview of dermatological image databases
- Describes projects that made use of a publicly available database of dermoscopy images, which contains 200 high-quality images along with their medical annotations

Brief synopsis of dermoscopy image analysis

- The initial draft of a summary paper can be found at:
 - [ISBI Challenge paper](#)

Please check back soon for the final version of the synopsis with references and tables.