Beyond Pixels: Exploiting Camera Metadata for Photo Classification

JOINT IEEE Chapter MEETING (IEEE Computer Society Rochester Chapter & IEEE GOLD - Graduate Of the Last Decade)

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Monday, March 21, 2005; 6:00 - 7:00 PM Presentation; 5:30 PM Doors open and refreshments provided by IEEE GOLD

Kodak Theater on the Ridge, **IMM Multi-Culture Room (2nd floor)**; 200 Ridge Road West, Rochester, NY

Parking is available in the Visitor Lot on the south side of Ridge Road. Enter at Kodak Theater on the Ridge and follow the Computer Society meeting signs.

Open to IEEE members and non-members; http://ewh.ieee.org/r1/rochester/comsoc/

Abstract

Semantic scene classification based only on low-level vision cues has had limited success on unconstrained image sets. On the other hand, camera metadata related to capture conditions provides cues independent of the captured scene content that can be used to improve classification performance. We consider three problems, indoor-outdoor classification, sunset detection, and man made natural classification. Analysis of camera metadata statistics for images of each class revealed that metadata fields, such as exposure time, flash fired, and subject distance, are most discriminative for each problem. A Bayesian network is employed to fuse content-based and metadata cues in the probability domain and degrades gracefully even when specific metadata inputs are missing (a practical concern). Finally, we provide extensive experimental results on the three problems using content-based and metadata cues to demonstrate the efficacy of the proposed integrated scene classification scheme.

This announcement is available for download in PDF format: Beyond Pixels: Exploiting Camera Metadata for Photo Classification