UW CENTER FOR
PATTERN ANALYSIS AND MACHINE INTELLIGENCE

GRADUATE SEMINAR SERIES

Saliency Detection in the Compressed Domain for Adaptive Image Retargeting

Speaker: Fang Yuming

Date: November 14, 2012

Time: 4:00 pm – 4:30 pm

Place: E5 (4128) Refreshments will be served

Abstract :

Saliency detection plays important roles in many image processing applications, such as image resizing. Existing saliency detection models are built in the uncompressed domain. Since most images over Internet are typically stored in the compressed domain such as JPEG, a novel saliency detection model in the compressed domain is designed for JPEG images. The features of the image are extracted from DCT coefficients in JPEG bit-stream. Saliency value of each DCT block is obtained based on the Hausdorff distance calculation and feature map fusion. Based on the proposed saliency detection model, we further design an adaptive image retargeting algorithm in the compressed domain. The proposed image retargeting algorithm utilizes multi-operator operation comprised of the block-based seam carving and the image scaling to resize images. Thanks to the directly derived accurate saliency information from the compressed domain, the proposed image retargeting algorithm effectively preserves the visually important regions for images and efficiently removes the less crucial regions for images.

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