UW Center for Pattern Analysis and Machine Intelligence

Graduate Seminar Series

A Mathematical Study of the Structural Similarity Index

Speaker: Dominique Brunet

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Date: June 13, 2012

Time: 4:30 pm – 5:00 pm

Place: E5 (5128) Refreshments will be served

Abstract :

In this talk, I will present my research on the Structural Similarity (SSIM) index, an image quality assessment measure. In a first part, a study of the mathematical properties of this quality metric will be carried on. Then it will be shown how to find optimal approximation of redundant bases (i.e. frames) according to the SSIM index. This will be accompanied with an example of application to image denoising (work in collaboration with A. Rehman). An overview of other subjects (point estimators, geodesic paths, self-similarity of images, use of residuals in image denoising) involving the SSIM index will finally be sketched out.

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