



Meiji University Global COE Program 54th Mathematical Sciences based on



Modeling, Analysis and Simulation seminar

Date: July 19, 2012, 16:30~18:00

Location: Meiji Univ. Ikuta Campus, Build 2 Annex A, Room A207.

Shunji Satoh (The University of Electro-Communications)

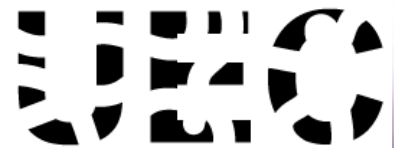
Title : Engineering and scientific approaches on vision science to develop novel algorithm and to solve paradox between physiology and perception.

Abstract : You may have an ultimate, effective, but mysterious system for information processing on image analysis; it's your vision system. The system enables character/face recognition, motion analysis, color processing and so on. Moreover, its ability surpasses existing image processing algorithm implemented in robots or OpenCV for example. If we understand our vision system theoretically, we will have a novel and effective algorithm or corresponding programming codes. However, our vision system is not perfect as known as visual illusion. For two image patches moving with equal speed but with different contrast, lower speed is perceived for the patch with lower contrast [Thompson, 1982]. Physical defects also exist in our eyes; both retinas have blind spots in which no photoreceptor exists. If we did not have filling-in algorithm to recover the lacking image, we would see big holes in front of you. From engineering viewpoints, this is just a topic on "digital image inpainting" which restores damaged films automatically [Bertalmio et al., 2000].

In this seminar, I will present a way for unifying knowledge obtained from interdisciplinary research on vision by taking up my researches:

(2) Filling-in process at the blind spots. (1) A MT model resolves a paradox between physiology and psychology.

before



after



Everyone is welcome to attend the MAS seminar.

Meiji institute for Advanced Study of Mathematical Science (<http://www.mims.meiji.ac.jp>)

(Organizers: M. Mimura, D. Ueyama, Y. Wakano, K. Ikeda and S.Kinoshita)

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Access: 10 minutes on foot from Ikuta St. Odakyu line,
Or 10 minutes by bus No. 13「明治大学正門前」, get off at the last stop.
See http://www.meiji.ac.jp/koho/campus_guide/ for details.