



IEEE International Conference on Multimedia & Expo  
July 6th-8th 2005, Amsterdam  
**ICME 2005**



## **AUTO CROPPING FOR DIGITAL PHOTOGRAPHS (ThuPmOR4)**

### **\* Author(s) :**

Mingju Zhang  
Lei Zhang  
Yanfeng Sun  
Lin Feng  
Wei-Ying Ma

(Dalian Univ. of Tech., China)  
(Microsoft Research Asia, China)  
(Microsoft Research Asia, China)  
(Dalian Univ. of Tech., China)  
(Microsoft Research Asia, China)

### **\* Abstract :**

In this paper, we propose an effective approach to the nearly untouched problem, still photograph auto cropping, which is one of the important features to automatically enhance photographs. To obtain an optimal result, we first formulate auto cropping as an optimization problem by defining an energy function, which consists of three sub models: composition sub model, conservative sub model and penalty sub model. Then, particle swarm optimization (PSO) is employed to obtain the optimal solution by maximizing the objective function. Experimental results and user studies over hundreds of photographs show that the proposed approach is effective and accurate in most cases, and can be used in many practical multimedia applications.

**Menu**