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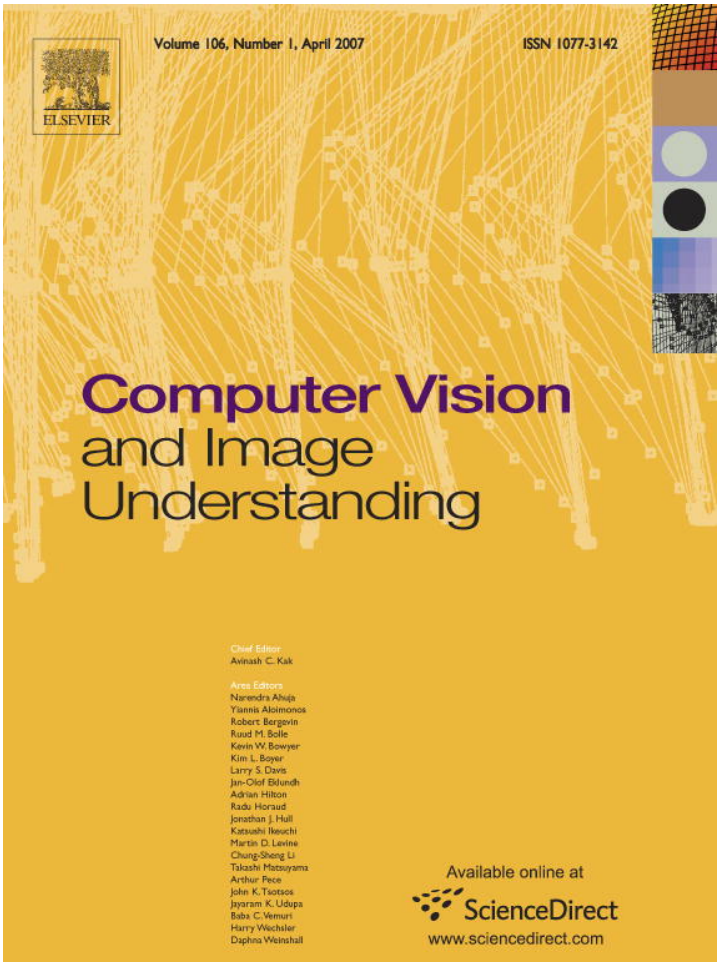

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Guest Editorial

Generative model based vision

This issue of *Computer Vision and Image Understanding* contains extended versions of articles originally presented at the second workshop on generative-model based vision: GMBV 2004 [12], plus two articles that were submitted to the special issue only. GMBV 2004 was held in Washington, DC in conjunction with the IEEE Computer Society Conference on Computer Vision and Pattern Recognition (CVPR). To put this special issue into context: the first GMBV workshop was held in Copenhagen, in conjunction with the European Conference on Computer Vision (ECCV) 2002, and a special issue followed in *Image and Vision Computing* [11].

Ever since the online announcement of the first GMBV workshop, we have adopted the definition of generative-model based vision as *a methodology that prescribes*

- *the formulation of a parameterized probabilistic model of image generation and*
- *estimation and/or maximization of the posterior probability of model parameters, given an image or image sequence.*

Two workshops and two special issues later, this definition is still useful. Actually, compared to those in the first special issue, the papers in this second issue perhaps better illustrate the GMBV methodology, in the sense that the two steps of model formulation and algorithm description are better differentiated in this new set of papers.

It is exciting to see that the GMBV approach is being applied to an ever wider range of vision problems. In the first GMBV special issue, 6 research areas were represented by 12 papers. In this special issue, 10 papers represent a wider range of topics: image texture and structure [7], appearance models [8,4], object detection [3], object recognition [13,5], stereo matching [2], optic flow [9], super-resolution [6], and tracking [1]. In addition, a paper of a more speculative nature [10] grew out of an early attempt to write a longer editorial. We shall spare the readers an overview of these papers, since they speak very well for themselves.

As in 2002, the dedication of authors and reviewers can only be described as above and beyond the call of duty. And as in 2002, we are sure that the authors will join us in thanking our workshop co-organizer, Alan Yuille; the organizers of the main conference (CVPR 2004); the editor-in-chief, Avi Kak; and the reviewers acknowledged below.

GMBV 2004 Program Committee

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Additional reviews were provided by Mihai Datcu, Li Fei-Fei, Sarang Joshi, Anitha Kannan, Rasmus Larsen, Peihua Li, Bo Markussen, Gloria Menegaz, Arthur Pece, Paul Sajda, Erik Sudderth, and Alan Yuille.

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