

# Guest Editorial

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Machine vision is an exciting part of modern cognitive and computer science with a significant growth in the areas of medical image processing, earth resource inventory, industrial production, automatic navigation and office automation.

The Second German–Slovenian Workshop treated some of the most important topics of machine vision: scene acquisition, object modeling and representation schemes for knowledge representation in machine vision systems. The workshop took place at the Faculty of Electrical and Computer Engineering in Ljubljana on 9th June, 1994 with participants from Croatia, Germany and Slovenia. It was organized by the cooperating research groups in the Universities of Erlangen–Nürnberg and Ljubljana, and supported by the Slovenia Section of IEEE and Pattern Recognition Society of Slovenia. The Alexander von Humboldt Foundation provided financial support.

The Journal of Computing and Information Technology is pleased to devote a complete issue to a selection of papers presented at the workshop. These papers were selected according our aim to give a survey of the topics treated in the workshop.

Franc Solina overviews volumetric modeling in machine vision with the emphasis on superquadrics, which seems to be the most suitable for modeling, segmenting, recognizing and representing the natural scenes.

Slobodan Ribarić and Berislav Lastrić presented the structure of a knowledge base designed by using an extension of the knowledge representation scheme based on Petri nets.

Mojca Parkelj and Nikola Pavešić used fuzzy Petri Nets as a knowledge representation scheme in which fuzzy production rules are applied for describing fuzzy relations between the propositions.

Maja Gerkšič and Nikola Pavešić presented a new, generalized scheme for knowledge representation of fuzzy timed systems.

Joachim Hornegger and H. Niemann explored the missing information principle and demonstrate how this can be applied to various computer vision tasks, in particular to object recognition and localization.

Joachim Denzler and H. Niemann developed a two stage object tracking system based on “snakes”, with the capability of automatic initialization and robust tracking over long image sequences in real time.

Michele Leonardi, Matjaž Fležar, Andrej Urbanč and Jadran Lenarčič proposed the Fourier Transform Profilometry for pulmonary function testing, as opposed to the Moiré Topography.

Drago Torkar and Rudolf Murn presented their experience in the development of a 2D positioning system, which integrates digital terrain model and GPS (global positioning system), and the work toward the system capable of positioning in 3D environment.

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*H. Niemann and Nikola Pavešić  
Erlangen and Ljubljana, September 1994.*