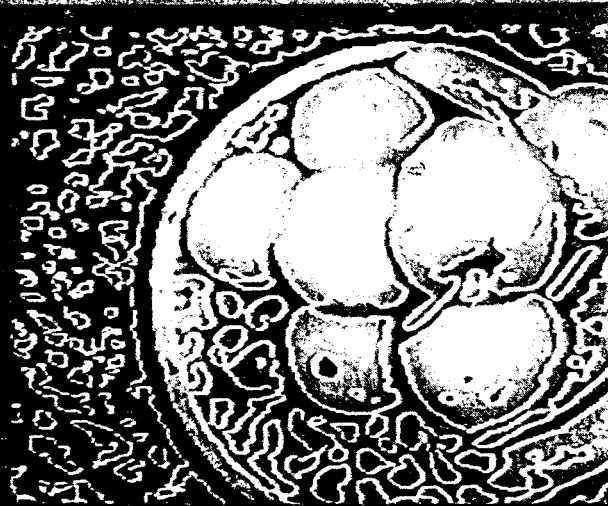
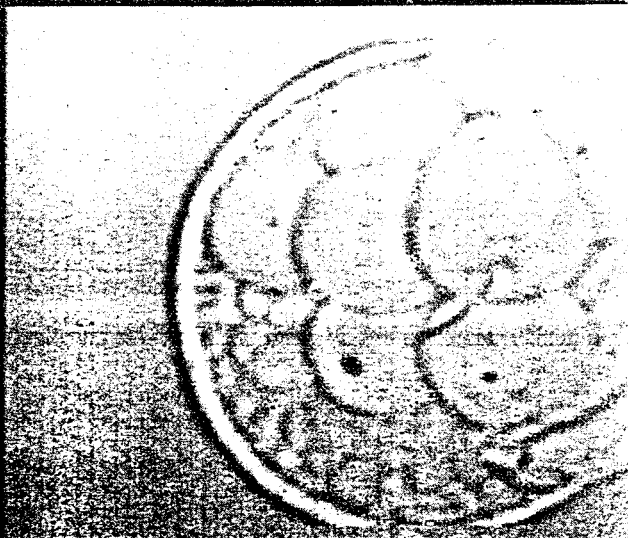


ELLIS HORWOOD SERIES IN ARTIFICIAL INTELLIGENCE

PARALLEL COMPUTER VISION

the VIS \rightarrow VIS system

D. Vernon and G. Sandini



ELLIS HORWOOD SERIES IN

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Dr D. VERNON, Department of Computer Science, Trinity College Dublin, Ireland, and Professor G. SANDINI, DIST, University of Genoa, Italy

Describing a computer vision environment which supports coarse granularity parallelism on transputer-based systems, this book discusses a system which treats the organization of the image data and its representation and interdependencies equally with the visual processes which operate on that data. As an environment, the system – VIS \rightarrow VIS – provides dynamic creation of images and attendant data structures, each of which are linked to provide an explicit representation of the interdependence of the visual cues. As a vision system, VIS \rightarrow VIS offers all the required functionality of 3-D image understanding, from image acquisition, through detection and analysis of intensity discontinuities, computation of depth from stereo and camera motion, segmentation using raw and full primal sketches, through to 3-D model construction and object recognition. Both geometric and functional parallelism are achieved by exploiting both the in-built vision control language – with its facility for remote execution of procedures – and the integrated system data-structures.

All of these issues are dealt with in considerable detail, and the book's emphasis on system organization integration of information and computer architectures, rather than purely theoretical and algorithmic issues, will make it a very welcome addition to the literature.

For: Computer vision scientists. Industrial research and development engineers. Computer scientists. Information technologists.

Dr D. VERNON's interests stretch from robot vision to the philosophy of science. His recent research activities have been concerned with the development of robot systems which display true autonomy. His work encompasses computational theories of perception, self-organization, and intelligence. Dr Vernon is a Fellow of Trinity College Dublin, Ireland.

Giulio Sandini has been working on research in computer and biological vision for more than twelve years, his primary interests at present being the integration of many low-level visual cues in a robust computational framework. He has also been very active in exploiting the neurobiological principles of early vision to postulate and implement artificial visual sensing at the 'retinal' level of computer vision. Professor Sandini is currently at the University of Genoa in Italy.

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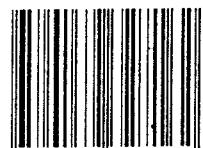
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