



Biologically Inspired Electronics for MicropowerVision Processing

By Timothy G. Constandinou

VDM Verlag Dr. Müller E.K. Okt 2013, 2013. Taschenbuch. Book Condition: Neu. 220x150x17 mm. Neuware - Vision processing is a topic traditionally associated with neurobiology; known to encode, process and interpret visual data most effectively. For example, the human retina; an exquisite sheet of neurobiological wetware, is amongst the most powerful and efficient vision processors known to mankind. With improving integrated technologies, this has generated considerable research interest in the microelectronics community in a quest to develop effective, efficient and robust vision processing hardware with real-time capability. This book describes the design of a bio-inspired hybrid analogue/digital chip for centroiding, sizing and counting of enclosed objects. This chip is the first silicon retina capable of centroiding and sizing multiple objects in true parallel fashion. Based on a novel distributed architecture, this system achieves ultra-fast and ultra-low power operation in comparison to conventional techniques. The techniques developed are applicable to vision and sensory processing applications in general that require processing of large numbers of parallel inputs, normally presenting a computational bottleneck. 284 pp. Englisch.

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