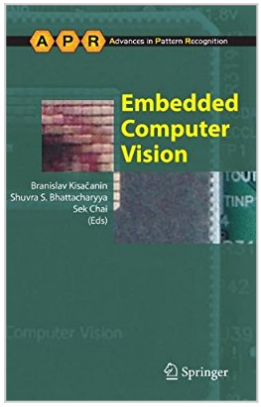

Embedded Computer Vision (Advances in Computer Vision and Pattern Recognition)

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As a graduate student at Ohio State in the mid-1970s, I inherited a unique c- puter vision laboratory from the doctoral research of previous students. They had designed and built an early frame-grabber to deliver digitized color video from a (very large) electronic video camera on a tripod to a mini-computer (sic) with a (huge!) disk drive?about the size of four washing machines. They had also - signed a binary image array processor and programming language, complete with a user's guide, to facilitate designing software for this one-of-a-kindprocessor. The overall system enabled programmable real-time image processing at video rate for many operations. I had the whole lab to myself. I designed software that detected an object in the eldofview,trackeditsmovementsinrealtime,anddisplayedarunningdescription of the events in English. For example: "An object has appeared in the upper right corner...Itismovingdownandtotheleft...Nowtheobjectisgettingcloser...The object moved out of sight to the left"?about like that. The algorithms were simple, relying on a suf cient image intensity difference to separate the object from the background (a plain wall). From computer vision papers I had read, I knew that vision in general imaging conditions is much more sophisticated. But it worked, it was great fun, and I was hooked.

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Editorial Review

Review

From the reviews:

“The book is a result of the Embedded Computer Vision Workshop 2007. … provides a very good overview of the current state of the art in embedded computer vision and of the major trends and growing markets. … it is a good start and provides an extensive list of references to look for if one wants to go into more detail. Overall I would recommend this book to anyone interested in getting into this exciting field.” (Marcus E. Hennecke, IAPR Newsletter, Vol. 33 (2), April, 2011)

From the Back Cover

Embedded Computer Vision, exemplified by the migration from powerful workstations to embedded processors in computer vision applications, is a new and emerging field that enables an associated shift in application development and implementation.

This comprehensive volume brings together a wealth of experiences from leading researchers in the field of embedded computer vision, from both academic and industrial research centers, and covers a broad range of challenges and trade-offs brought about by this paradigm shift. Part I provides an exposition of basic issues and applications in the area necessary for understanding the present and future work. Part II offers chapters based on the most recent research and results. Finally, the last part looks ahead, providing a sense of what major applications could be expected in the near future, describing challenges in mobile environments, video analytics, and automotive safety applications.

Features:

• Discusses the latest state-of-the-art techniques in embedded computer vision

• Presents a thorough introductory section on hardware and architectures, design methodologies, and video analytics to aid the reader’s understanding through the following chapters

• Offers emphasis on tackling important problems for society, safety, security, health, mobility, connectivity, and energy efficiency

• Discusses evaluation of trade-offs required to design cost-effective systems for successful products

• Explores the advantages of various architectures, development of high-level software frameworks and cost-effective algorithmic alternatives

• Examines issues of implementation on fixed-point processors, presented through an example of an automotive safety application

• Offers insights from leaders in the field on what future applications will be

This book is a welcome collection of stand-alone articles, ideal for researchers, practitioners, and graduate students. It provides historical perspective, the latest research results, and a vision for future developments in

the emerging field of embedded computer vision. Supplementary material can be found at http://www.embeddedvisioncentral.com.

Users Review

From reader reviews:

Gregory Jager:

Do you have favorite book? In case you have, what is your favorite's book? Guide is very important thing for us to find out everything in the world. Each guide has different aim or goal; it means that publication has different type. Some people experience enjoy to spend their a chance to read a book. These are reading whatever they acquire because their hobby is actually reading a book. Why not the person who don't like reading a book? Sometime, individual feel need book whenever they found difficult problem or maybe exercise. Well, probably you'll have this Embedded Computer Vision (Advances in Computer Vision and Pattern Recognition).

Paula Adame:

Now a day people who Living in the era exactly where everything reachable by interact with the internet and the resources inside can be true or not require people to be aware of each data they get. How many people to be smart in receiving any information nowadays? Of course the answer then is reading a book. Examining a book can help persons out of this uncertainty Information especially this Embedded Computer Vision (Advances in Computer Vision and Pattern Recognition) book as this book offers you rich facts and knowledge. Of course the info in this book hundred pct guarantees there is no doubt in it everbody knows.

Kevin Hardy:

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