

A Practical Introduction To Computer Vision With Opencv Wiley Ist Series In Imaging Science And Technology

Since the first edition of this book was written in 1977, there has been a tremendous increase in the use of Pascal. This increased use has had two significant effects. (1) It has produced a better understanding of the facilities of Pascal and their use. (2) It has fostered the production of the ISO standard for Pascal. This second edition reflects both this better understanding and the clarifications and changes to Pascal which have resulted from the production of the BS/ISO Pascal standard. The standard (BS 6192, which supplies the technical content for ISO 7185) is the definitive document on Pascal. My work on the Pascal standard has convinced me that the description of a programming language may be tutorial, or it may be definitive, or it may be neither! The chapters of this book do not constitute a definitive description of Pascal. They are essentially tutorial. The book is based on an introductory lecture course given at Manchester. In addition to lectures, the course consists of two kinds of practical work. The first is based on the solution of short pencil-and-paper exercises. The second requires the student to write complete programs and run them using interactive computer terminals. Each chapter of the book concludes with exercises and problems suitable for these purposes. Although solutions to all of these are not presented in the book, teaching staff may obtain them by application to the authors.

An introduction to corpus-based language research, covering the use of computers, obtaining corpus material, analytical tools, and applications of computerized natural language processing. Offers guidance on programming at a level suitable for readers with no prior experience, and includes exercises and suggested solutions, case studies, and a glossary. Appendices discuss specific programming languages for language programming and give detailed programming examples with commentary. Annotation copyrighted by Book News, Inc., Portland, OR

Computer networking and cybersecurity are challenging subjects, partly because of the constant rise and fall of related technologies and IT paradigms. As the title implies, much focus of this book is on providing the audience with practical, as well as, theoretical knowledge necessary to build a solid ground for a successful professional career. A Practical Introduction to Enterprise Network and Security Management contains 12 chapters of the correct amount of coverage for a semester or quarter. It balances introductory and fairly advanced subjects on computer networking and cybersecurity to deliver effectively technical and managerial knowledge. It explains sometimes challenging concepts in a manner that students can follow with careful reading. A Practical Introduction to Enterprise Network and Security Management is designed to offer impactful, hands-on learning experiences without relying on a computer lab. First, each chapter comes with practical exercise questions. In the class setting, they are good as individual or group assignments. Many of them are based on simulated or real cases, and take advantage of actual industry products and systems for a reader to better relate theories to practice. Second, there are a number of information-rich screen shots, figures, and tables in each chapter carefully constructed to solidify concepts and thus enhance visual learning. A Practical Introduction to Enterprise Network and Security Management: Is written for students studying management information systems, accounting information systems, or computer science in a semester of 15 to 16 weeks, and exposed to the subject for the first time Takes advantage of many real cases and examples, and actual industry products and services (software, hardware, and configurations) so that students can better relate concepts and theories to practice Explains subjects in a systematic, but very practical manner that students can follow through Provides students with practical understanding of both computer networking and cybersecurity Contains highly practical exercise questions, which can be individual or group assignments within or without the class, included in each chapter to reinforce learning. In addition to the thorough technical details, managerial issues including, enterprise network planning, design, and management from the practitioner's perspective are embedded throughout the text to assist balanced learning. Bearing in mind of the critical importance of security in today's enterprise networks, the text discusses the implications of network design and management on enterprise security whenever appropriate. Lastly, to reinforce knowledge in security management further, two chapters introduce the fundamentals of cybersecurity in terms of threat types and defense techniques.

It is a great pleasure to write a preface to this book. In my view, the content is unique in that it blends traditional teaching approaches with the use of mathematics and a mainstream Hardware Design Language (HDL) as formalisms to describe key concepts. The book keeps the "machine" separate from the "application" by strictly following a bottom-up approach: it starts with transistors and logic gates and only introduces assembly language programs once their execution by a processor is clearly defined. Using a HDL, Verilog in this case, rather than static circuit diagrams is a big deviation from traditional books on computer architecture. Static circuit diagrams cannot be explored in a hands-on way like the corresponding Verilog model can. In order to understand why I consider this shift so important, one must consider how computer architecture, a subject that has been studied for more than 50 years, has evolved. In the pioneering days computers were constructed by hand. An entire computer could (just about) be described by drawing a circuit diagram. Initially, such diagrams consisted mostly of analogue components before later moving toward digital logic gates. The advent of digital electronics led to more complex cells, such as half-adders, multiplexers, and decoders being recognised as useful building blocks.

This book is an introduction to the foundations and methods used for designing completely autonomous mobile robots. Readers are introduced to the fundamental concepts of mobile robotics via twelve detailed case studies which show how to build and program real working robots. The book provides a very practical introduction to mobile robotics for a general scientific audience, and is essential reading for practitioners and students working in robotics, artificial intelligence, cognitive science and robot engineering.

Basics - Notation - Lattices - A simple language - Direct semantics - Control - Data structures and data types - A prolog semantics - Miscellaneous.

Explains the theory behind basic computer vision and provides a bridge from the theory to practical implementation using the industry standard OpenCV libraries Computer Vision is a rapidly expanding area and it is becoming progressively easier for developers to make use of this field due to the ready availability of high quality libraries (such as OpenCV2). This text is intended to facilitate the practical use of computer vision with the goal being to bridge the gap between the theory and the practical implementation of computer vision. The book will explain how to use the relevant OpenCV library routines and will be accompanied by a full working program including the code snippets from the text. This textbook is a heavily illustrated, practical introduction to an exciting field, the applications of which are becoming almost ubiquitous. We are now surrounded by cameras, for example cameras on computers & tablets/ cameras built into our mobile phones/ cameras in games consoles; cameras imaging difficult modalities (such as ultrasound, X-ray, MRI) in hospitals, and surveillance cameras. This book is concerned with helping the next generation of computer developers to make use of all these images in order to develop systems which are more intuitive and interact with us in more intelligent ways. Explains the theory behind basic computer vision and provides a bridge from the theory to practical implementation using the industry standard OpenCV libraries Offers an introduction to computer vision, with enough theory to make clear how the various algorithms work but with an emphasis on practical programming issues Provides enough material for a one semester course in computer vision at senior undergraduate and Masters levels Includes the basics of cameras and images and image processing to remove noise, before moving on to topics such as image histogramming; binary imaging; video processing to detect and model moving objects; geometric operations & camera models; edge detection; features detection; recognition in images Contains a large number of vision application problems to provide students with the opportunity to solve real problems. Images or videos for these problems are provided in the resources associated with this book which include an enhanced eBook

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This is a practical introduction to the key computing concepts of networks and communications, suitable for a first year undergraduate or industrial course. It provides the foundational knowledge on which to build a fully developed understanding of modern communications methodologies, techniques and standards. It will also be a useful professional reference companion.; The book begins with a general introduction to data communications and the options commonly open to the system designer. It then provides overviews of the key areas in which design decisions must be made: communication media; interface standards; network architectures; modems and multiplexers; network topologies, switching and access control; local area networks; wide-area networks; performance; software issues; security; and implementation.; As a second edition of an established text the book has been thoroughly revised and improved but retains the strengths of the first edition in its clear and well-illustrated exposition. It includes current developments in standards and architecture including ATM, B-ISDN, SNMP, TCP/IP, and other state-of-the-art features of the computer communications world.; In its first edition the book was an authoritative textbook and personal reference for industry. In this new edition it should be even more essential for all with a need for an accessible modern technical introduction to computer communications and networks. Suitable for a practically orientated computer science course at degree level or for an introductory industrial course.

This is a practical book for computer engineers who want to understand or implement hardware/software systems. It focuses on problems that require one to combine hardware design with software design – such problems can be solved with hardware/software codesign. When used properly, hardware/software codesign works better than hardware design or software design alone: it can improve the overall performance of digital systems, and it can shorten their design time. Hardware/software codesign can help a designer to make trade-offs between the flexibility and the performance of a digital system. To achieve this, a designer needs to combine two radically different ways of design: the sequential way of decomposition in time, using software, with the parallel way of decomposition in space, using hardware. Intended Audience This book assumes that you have a basic understanding of hardware that you are familiar with standard digital hardware components such as registers, logic gates, and components such as multiplexers and arithmetic operators. The book also assumes that you know how to write a program in C. These topics are usually covered in an introductory course on computer engineering or in a combination of courses on digital design and software engineering.

The popularity of Pascal as a teaching language has rapidly increased, as demonstrated by Addyman's survey conducted over a 11 European and American institutions (Comput. Bull., Series 2,8, June

