Pixl Maths January 2014

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Water Is... Nina Munteanu 2015-01 Part history, part science and part philosophy and spirituality, "Water Is..." combines personal journey with scientific discovery that explores water's many identities and ultimately our own. Written by internationally published author, teacher and limnologist Nina Munteanu.

Signal Processing for Computer Vision Gösta H. Granlund 1994-12-31 Signal Processing for Computer Vision is a unique and thorough treatment of the signal processing aspects of filters and operators for low-level computer vision. Computer vision has progressed considerably over recent years. From methods only applicable to simple images, it has developed to deal with increasingly complex scenes, volumes and time sequences. A substantial part of this book deals with the problem of designing models that can be used for several purposes within computer vision. These partial models have some general properties of invariance generation and generality in model generation. Signal Processing for Computer Vision is the first book to give a unified treatment of representation and filtering of higher order data, such as vectors and tensors in multidimensional space. Included is a systematic organisation for the implementation of complex models in a hierarchical modular structure and novel material on adaptive filtering using tensor data representation. Signal Processing for Computer Vision is intended for final year undergraduate and graduate students as well as engineers and researchers in the field of computer vision and image processing.

Edexcel A Level Maths: Year 2 Katie Wood 2020-10-08 This Student Book provides full support for year two of an Edexcel A Level course. Written by a well recognised author team of experienced teachers, this book supports the major changes in assessment style. Using clear and concise explanations, and abundant worked examples, it covers all the pure, mechanics and statistics content needed.

The Boy Who Grew Dragons Andy Shepherd 2020-02-04 "'The Boy Who Grew Dragons' is good-hearted fantasy fun."-New York Times Book Review "This gently funny title is a must-purchase for public libraries, and a great recommendation for readers of all ages"-School Library Journal, STARRED REVIEW "Never has so much toilet humor been so charming."-Kirkus Reviews "Readers will be eager for more."-Booklist This hilarious middle-grade novel with illustrations throughout sees Tomas discover that he can grow dragons in his own garden! When Tomas discovers a strange old tree at the bottom of his grandfather's garden, he doesn't think much of it. But he takes the funny fruit from the tree back into the house and gets the shock of his life when a tiny dragon hatches! The tree is a dragon fruit tree, and Tomas now has his very own

dragon, Flicker! While Tomas finds out that life with Flicker is fun, he also finds that it is very...unpredictable. Yes, dragons are wonderful, but they also set fire to your toothbrush and leave your underwear hanging from the TV antenna. Tomas has to learn how to look after Flicker---and quickly! And then something extraordinary happens: More dragon fruits appear on the tree! Now it's official, Tomas is growing dragons.

Applied Algorithms Prosenjit Gupta 2014-01-08 This book constitutes the refereed proceedings of the First International Conference on Applied Algorithms, ICAA 2014, held in Kolkata, India, in January 2014. ICAA is a new conference series with a mission to provide a quality forum for researchers working in applied algorithms. Papers presenting original contributions related to the design, analysis, implementation and experimental evaluation of efficient algorithms and data structures for problems with relevant real-world applications were sought, ideally bridging the gap between academia and industry. The 21 revised full papers presented together with 7 short papers were carefully reviewed and selected from 122 submissions.

An Introduction to Numerical Methods in C++ Brian Hilton Flowers 2000 Designed for the many applied mathematicians and engineers who wish to explore computerized numerical methods, this text communicates an enthusiasm for the power of C++, an object-oriented language, as a tool for this kind of work. This revision of the successful first edition includes for thefirst time information on programming in Windows-based environments. In addition this revision includes new topics and methods throughout the text that clarify and enhance the treatment of the subject. From reviews of the first edition: 'If you are interested in numerical methods or are looking fora course text this book is worth your attention.'' Journal of the Association of C and C++ Users

The Differentiated Classroom Carol Ann Tomlinson 2014-05-25 Although much has changed in schools in recent years, the power of differentiated instruction remains the same—and the need for it has only increased. Today's classroom is more diverse, more inclusive, and more plugged into technology than ever before. And it's led by teachers under enormous pressure to help decidedly unstandardized students meet an expanding set of rigorous, standardized learning targets. In this updated second edition of her best-selling classic work, Carol Ann Tomlinson offers these teachers a powerful and practical way to meet a challenge that is both very modern and completely timeless: how to divide their time, resources, and efforts to effectively instruct so many students of various backgrounds, readiness and skill levels, and interests. With a perspective informed by advances in research and deepened by more than 15 years of implementation feedback in all types of schools, Tomlinson explains the theoretical basis of differentiated instruction, explores the variables of curriculum and learning environment, shares dozens of instructional strategies, and then goes inside elementary and secondary classrooms in nearly all subject areas to illustrate how real teachers are applying differentiation principles and strategies to respond to the needs of all learners. This book's insightful guidance on what to differentiate, how to differentiate, and why lays the groundwork for bringing differentiated instruction into your own classroom or refining the work you already do to help each of your wonderfully unique learners move toward greater knowledge, more advanced skills, and expanded understanding. Today more than ever, The Differentiated Classroom is a must-have staple for every teacher's shelf and every school's professional development collection.

Computer Imaging Scott E Umbaugh 2005-01-27 Computer Imaging: Digital Image Analysis and Processing brings together analysis and processing in a unified framework, providing a valuable foundation for understanding both computer vision and image processing applications. Taking an engineering approach, the text integrates

theory with a conceptual and application-oriented style, allowing you to immediately understand how each topic fits into the overall structure of practical application development. Divided into five major parts, the book begins by introducing the concepts and definitions necessary to understand computer imaging. The second part describes image analysis and provides the tools, concepts, and models required to analyze digital images and develop computer vision applications. Part III discusses application areas for the processing of images, emphasizing human visual perception. Part IV delivers the information required to apply a CVIPtools environment to algorithm development. The text concludes with appendices that provide supplemental imaging information and assist with the programming exercises found in each chapter. The author presents topics as needed for understanding each practical imaging model being studied. This motivates the reader to master the topics and also makes the book useful as a reference. The CVIPtools software integrated throughout the book, now in a new Windows version, provides practical examples and encourages you to conduct additional exploration via tutorials and programming exercises provided with each chapter.

The Math(s) Fix Conrad Wolfram 2020 Why are we all taught maths for years of our lives? Does it really empower everyone? Or fail most and disenfranchise many? Is it crucial for the AI age or an obsolete rite of passage? The Math(s) Fix: An Education Blueprint for the AI Age is a groundbreaking book that exposes why maths education is in crisis worldwide and how the only fix is a fundamentally new mainstream subject. It argues that today's maths education is not working to elevate society with modern computation, data science and AI. Instead, students are subjugated to compete with what computers do best, and lose. This is the only book to explain why being "bad at maths" may be as much the subject's fault as the learner's: how a stuck educational ecosystem has students, parents, teachers, schools, employers and policymakers running in the wrong direction to catch up with real-world requirements. But it goes further too"¬,¬"for the first time setting out a completely alternative vision for a core computational school subject to fix the problem and seed more general reformation of education for the AI age.

Parallel Algorithms for Regular Architectures Russ Miller 1996 Parallel-Algorithms for Regular Architectures is the first book to concentrate exclusively on algorithms and paradigms for programming parallel computers such as the hypercube, mesh, pyramid, and mesh-of-trees.

Scanning Probe Lithography Hyongsok T. Soh 2001-06-30 Scanning Probe Lithography (SPL) describes recent advances in the field of scanning probe lithography, a high resolution patterning technique that uses a sharp tip in close proximity to a sample to pattern nanometer-scale features on the sample. SPL is capable of patterning sub-30nm features with nanometer-scale alignment registration. It is a relatively simple, inexpensive, reliable method for patterning nanometer-scale features on various substrates. It has potential applications for nanometer-scale research, for maskless semiconductor lithography, and for photomask patterning. The authors of this book have been key players in this exciting new field. Calvin Quate has been involved since the beginning in the early 1980s and leads the research time that is regarded as the foremost group in this field. Hyongsok Tom Soh and Kathryn Wilder Guarini have been the members of this group who, in the last few years, have brought about remarkable series of advances in SPM lithography. Some of these advances have been in the control of the tip which has allowed the scanning speed to be increased from mum/second to mm/second. Both non-contact and in-contact writing have been demonstrated as has controlled writing of sub-100 nm lines over large steps on the substrate surface. The engineering of a custom-designed MOSFET built into each microcantilever for individual current control is another notable achievement. Micromachined arrays of probes each with

individual control have been demonstrated. One of the most intriguing new aspects is the use of directly-grown carbon nanotubes as robust, high-resolution emitters. In this book the authors concisely and authoritatively describe the historical context, the relevant inventions, and the prospects for eventual manufacturing use of this exciting new technology.

Handbook of Computer Animation John Vince 2003 Written by specialists in teaching computer animation, this text addresses key international topics of computer animation, such as: mathematics, modelling, rendering, and compositing. Each chapter discusses a particular topic and how it is applied, including state-of-the-art techniques that are used in computer animation. The handbook provides a complete and up-to-date picture of computer animation and will be a valuable reference source for programmers, technical directors and animators in computer animation, computer games and special effects and also undergraduate and postgraduate students. The editor, John Vince, has written and edited over 20 books on computer graphics, computer animation and virtual reality.

Swish Joel Derfner 2009-06-16 A witty study of modern-day ideas about gay culture shares the author's personal exploration of his own gay identity through his exploits and adventures in the world of musical theater, Internet dating, summer camp, needlecraft, aerobics, go-go dancing, and more. 25,000 first printing.

The Pattern Book Clifford A. Pickover 1995 Although the patterns are computer-generated, the book is informal and emphasis is on the fun that the true pattern lover finds in doing rather than in reading about the doing.

A Compendium of Mathematical Methods Jo Morgan 2020-02-04 Brings together over one hundred different approaches from classrooms worldwide, exposing mathematicians to methods that they've never before encountered.

Pattern Recognition with Neural Networks in C++ Abhijit S. Pandya 1995-10-17 The addition of artificial neural network computing to traditional pattern recognition has given rise to a new, different, and more powerful methodology that is presented in this interesting book. This is a practical guide to the application of artificial neural networks. Geared toward the practitioner, Pattern Recognition with Neural Networks in C++ covers pattern classification and neural network approaches within the same framework. Through the book's presentation of underlying theory and numerous practical examples, readers gain an understanding that will allow them to make judicious design choices rendering neural application predictable and effective. The book provides an intuitive explanation of each method for each network paradigm. This discussion is supported by a rigorous mathematical approach where necessary. C++ has emerged as a rich and descriptive means by which concepts, models, or algorithms can be precisely described. For many of the neural network models discussed, C++ programs are presented for the actual implementation. Pictorial diagrams and in-depth discussions explain each topic. Necessary derivative steps for the mathematical models are included so that readers can incorporate new ideas into their programs as the field advances with new developments. For each approach, the authors clearly state the known theoretical results, the known tendencies of the approach, and their recommendations for getting the best results from the method. The material covered in the book is accessible to working engineers with little or no explicit background in neural networks. However, the material is presented in sufficient depth so that those with prior knowledge will find this book beneficial. Pattern Recognition with Neural Networks in C++ is also suitable for courses in neural networks at an advanced undergraduate or graduate level. This book is valuable for academic as well as practical research.

3D Computer Graphics Sam Buss 2003-05-19 Table of contents

Adobe Photoshop CS3 Andrew Faulkner

2007 This tutorial covers Adobe's Photoshop CS3, including the new file browser, non-square pixel support and much more. Easy to use project files on the CD-ROM provide the perfect complement to the text.
Statistical Atlases and Computational Models of the Heart: Imaging and Modelling Challenges Oscar Camara 2014-12-31 This book constitutes the thoroughly refereed post-conference proceedings of the 5th International Workshop on Statistical Atlases and Computational Models of the Heart: Imaging and Modelling Challenges, STACOM 2014, held in conjunction with MICCAI 2014, in Boston, MA, USA, in September 2014. The 30 revised full papers were carefully reviewed and selected from numerous submissions. The papers cover a wide range of topics such as sections on cardiac image processing; atlas construction; statistical modelling of cardiac function across different patient populations; cardiac mapping; cardiac computational physiology; model customization; atlas based functional analysis; ontological schemata for data and results; integrated functional and structural analyses; as well as the pre-clinical and clinical applicability of these methods.
The Noisy Classroom Debbie Newman 2019-08-29 Debate and critical oracy allow students to deepen their knowledge and understanding of academic subjects while simultaneously developing their communication and critical thinking skills, which can be hugely effective in increasing attainment. This book, written by an experienced teacher and founder of The Noisy Classroom, aims to help students learn to argue, disagree and debate in a constructive manner. Packed with resources and engaging exercises, it shows teachers how to develop an argument culture in the classroom that promotes open-mindedness and encourages students to explore new perspectives, defend views and challenge others. The Noisy Classroom includes: A reflection on critical oracy and why it is important. A step-by-step guide for teachers to set up and encourage debate across the curriculum, highlighting how to get the most out of a noisy classroom. Advice for teachers on how to overcome barriers to building and using critical oracy in the classroom, including troubleshooting when things go wrong. Practical ideas for sharpening pair, group and whole-class discussions, ranging from small starter and plenary activities to full parliamentary-style debates. The book brings together activities gathered and tested over 20 years of working in debate, oracy and education. It is intended for school teachers, including both NQTs and more experienced practitioners.
Liquid Crystal TV Displays E. Kaneko 1987-04-30 'Kaneko's work in the best manner is filling a gap in the present literature and will be a standard reference source for all people interested in LCD's.' Crystal Research and Technology, 1988
Marching to Different Drummers Pat Burke Guild 1998 Initially published in 1985, Marching to Different Drummers was one of the first sources to pull together information on what was a newly flourishing topic in education. Now, more than a decade later, this revised and expanded edition takes a fresh look at the subject. Among the new chapters are a discussion of the importance of knowledge about students' culture, learning styles in light of recent discoveries about the functioning of the brain, and how learning styles relate to Howard Gardner's theory of multiple intelligences. Part I defines style and looks at the history of style research. Part II describes applications of style in seven areas, illustrated through the research models of Carl Jung, Herman A. Witkin, Walter Barbe and Raymond Swassing, Rita Dunn and Kenneth Dunn, Anthony Gregorc, Bernice McCarthy, and Howard Gardner. Part III identifies common questions and discusses implementation and staff development. A comprehensive annotated bibliography sets the stage for further study. Authors Pat Burke Guild and Stephen Garger have spent nearly 25 years studying styles, applying its research, teaching about styles, and listening to students and educators talk about styles. Their extensive experience in teacher education over the past decade grounds the theory in the second edition of Marching to

Different Drummers with a practicality that all educators will value.

Analytical and discursive writing [in history at key stage 3 Christine Counsell 1997

On the Connection of the Physical Sciences Mary Somerville 1846

Parallel Supercomputing in SIMD Architectures R. Michael Hord 1990-04-30 Parallel Supercomputing in SIMD Architectures is a survey book providing a thorough review of Single-Instruction-Multiple-Data machines, a type of parallel processing computer that has grown to importance in recent years. It was written to describe this technology in depth including the architectural concept, its history, a variety of hardware implementations, major programming languages, algorithmic methods, representative applications, and an assessment of benefits and drawbacks. Although there are numerous books on parallel processing, this is the first volume devoted entirely to the massively parallel machines of the SIMD class. The reader already familiar with low order parallel processing will discover a different philosophy of parallelism--the data parallel paradigm instead of the more familiar program parallel scheme. The contents are organized into nine chapters, rich with illustrations and tables. The first two provide introduction and background covering fundamental concepts and a description of early SIMD computers. Chapters 3 through 8 each address specific machines from the first SIMD supercomputer (Illiac IV) through several contemporary designs to some example research computers. The final chapter provides commentary and lessons learned. Because the test of any technology is what it can do, diverse applications are incorporated throughout, leading step by step to increasingly ambitious examples. The book is intended for a wide range of readers. Computer professionals will find sufficient detail to incorporate much of this material into their own endeavors. Program managers and applications system designers may find the solution to their requirements for high computational performance at an affordable cost. Scientists and engineers will find sufficient processing speed to make interactive simulation a practical adjunct to theory and experiment. Students will find a case study of an emerging and maturing technology. The general reader is afforded the opportunity to appreciate the power of advanced computing and some of the ramifications of this growing capability.

Parallel and Distributed Discrete Event Simulation Carl Tropper 2002 Discrete-event simulation has long been an integral part of the design process of complex engineering systems and the modelling of natural phenomena. Many of the systems that we seek to understand or control can be modelled as digital systems. In a digital model, we view the system at discrete instants of time, in effect taking snapshots of the system at these instants. For example, in a computer network simulation an event can be the sending of a message from one node to another node while in a VLSI logic simulation, the arrival of a signal at a gate may be viewed as an event. Digital systems such as computer systems are naturally susceptible to this approach. However, a variety of other systems may also be modelled this way. These include transportation systems such as air-traffic control systems, epidemiological models such as the spreading of a virus, and military war-gaming models. This book is representative of the advances in this field.

Putting Staff First John Tomsett 2020-04-21 If we don't ensure that our teachers are physically and mentally well, they cannot be their best for their students.If we do not ensure, first and foremost, that our teachers are feeling physically and mentally well, they cannot be their best for their students. Consequently, a school which does not prioritize staff wellbeing is disadvantaging its own students. 'Students first' is a misplaced sentiment: the best thing for students is a happy, healthy, motivated, well-trained, expert staff. By putting staff first you are providing for students the one thing which will help them make good progress in their learning: truly great

teaching. Whilst it is easy to say that schools would not exist if it were not for the students, the glib converse is that without truly great school staff, the students would not be taught. What we need - as recruiting subject specialist teachers, school leaders and specialist support staff becomes increasingly difficult - is a revolution in how we treat our school staff. We have to put our staff before our students because it is the only hope we have of securing what our students need most: a world class education. The longer our schools are populated with hypoxic adults, we imperial all our futures.

Tensor Voting Philippos Mordohai 2006-12-01 This lecture presents research on a general framework for perceptual organization that was conducted mainly at the Institute for Robotics and Intelligent Systems of the University of Southern California. It is not written as a historical recount of the work, since the sequence of the presentation is not in chronological order. It aims at presenting an approach to a wide range of problems in computer vision and machine learning that is data-driven, local and requires a minimal number of assumptions. The tensor voting framework combines these properties and provides a unified perceptual organization methodology applicable in situations that may seem heterogeneous initially. We show how several problems can be posed as the organization of the inputs into salient perceptual structures, which are inferred via tensor voting. The work presented here extends the original tensor voting framework with the addition of boundary inference capabilities; a novel re-formulation of the framework applicable to high-dimensional spaces and the development of algorithms for computer vision and machine learning problems. We show complete analysis for some problems, while we briefly outline our approach for other applications and provide pointers to relevant sources.

Optical Superresolution Zeev Zalevsky 2004 The authors explore the ways to improve the classical resolution limits of an imaging system, and provide novel approaches for achieving better results than would otherwise be possible with current imaging technology. The book begins by presenting the theoretical foundations, background information, and terminology of super resolution, and then discusses methods and systems used to achieve the super resolution effect. Various approaches to dealing with and exceeding the limitations of the lens aperture, the pixel size of the camera, and the noise generated at the detector are presented and analyzed. The last chapter illustrates several industry-related examples and potential applications to real industrial electro-optical systems. This book is intended for graduate students or researchers in academia or industry, and anyone else looking to improve the performance of their electro-optical system design.

Mathematical Tasks Chris McGrane 2020-10-01 If we want our pupils to develop fluency, understanding and the ability to solve complex problems, then it is vital that teachers develop the ability to select, adapt and design appropriate mathematical tasks. In 'Mathematical Tasks: The Bridge Between Teaching and Learning', Chris McGrane and Mark McCourt a range of practical approaches, strategies and principles behind the design and effective use of tasks in the mathematics classroom that lead to all pupils becoming successful learners. First-hand interviews with world class mathematics education experts and practicing teachers bring to life the ideas behind how tasks can act as a bridge between what the teacher wants the pupil to make sense of and what the pupil actually does makes sense of; tasks are how we enable pupils to enact mathematics - it is only by being mathematical that pupils can truly make connections across mathematical ideas and understand the bigger picture. This is a book for classroom teachers. Chris McGrane offers a range of practical examples for nurturing deep learning in mathematics that can be adapted and embedded in one's own classroom practice. This is also a book for those who are interested in the theory behind tasks. Chris

and his interviewees examine the key role tasks play in shaping learning, teaching, curriculum and assessment. Suitable for teachers at all stages in their careers and teachers are encouraged to return to the book from time to time over the years to notice how their use of tasks in the classroom changes as they themselves develop.

Proxies Dylan Mulvin 2021-08-17 How those with the power to design technology, in the very moment of design, are allowed to imagine who is included--and who is excluded--in the future. Our world is built on an array of standards we are compelled to share. In Proxies, Dylan Mulvin examines how we arrive at those standards, asking, "To whom and to what do we delegate the power to stand in for the world?" Mulvin shows how those with the power to design technology, in the very moment of design, are allowed to imagine who is included--and who is excluded--in the future. For designers of technology, some bits of the world end up standing in for other bits, standards with which they build and calibrate. These "proxies" carry specific values, even as they disappear from view. Mulvin explores the ways technologies, standards, and infrastructures inescapably reflect the cultural milieus of their bureaucratic homes. Drawing on archival research, he investigates some of the basic building-blocks of our shared infrastructures. He tells the history of technology through the labor and communal practices of, among others, the people who clean kilograms to make the metric system run, the women who pose as test images, and the actors who embody disease and disability for medical students. Each case maps the ways standards and infrastructure rely on prototypical ideas of whiteness, able-bodiedness, and purity to control and contain the messiness of reality. Standards and infrastructures, Mulvin argues, shape and distort the possibilities of representation, the meaning of difference, and the levers of change and social justice.

Color Confidence Tim Grey 2004-03-29 From a well-known digital imaging expert comes an engagingly well-written, to-the-point guide that allows readers to quickly get the results they want. The full-color interior features an elegant design and example images from well-known photographers.

The Pixel Eye Paul Levinson 2003-08-02 NYPD forensic detective Dr. Phil D'Amato's latest futuristic adventure pits personal loyalties against public responsibilities, safety against freedom, and the right to know against animal rights, all against a backdrop of a post 9/11 New York City.

If You Were a Noun Michael Dahl 2006 Life as a word can be wild and a lot of work. Discover how these lexicons live and how they help build sentences. Provides an introduction to nouns and proper nouns. Includes an activity.

Image Processing for Computer Graphics Jonas Gomes 1997 Image processing is a central theme in computer graphics. This book provides a modern introduction to both the underlying mathematics and the main concepts and techniques of the subject. It covers important modern techniques such as morphing and warping images as well as dithering, compositing, and other operations on images.

Numerical Simulation in Physics and Engineering Inmaculada Higueras 2016-07-01 This book presents lecture notes from the XVI ‘Jacques-Louis Lions’ Spanish-French School on Numerical Simulation in Physics and Engineering, held in Pamplona (Navarra, Spain) in September 2014. The subjects covered include: numerical analysis of isogeometric methods, convolution quadrature for wave simulations, mathematical methods in image processing and computer vision, modeling and optimization techniques in food processes, bio-processes and bio-systems, and GPU computing for numerical simulation. The book is highly recommended to graduate students in Engineering or Science who want to focus on numerical simulation, either as a research topic or in the field of industrial applications. It can also benefit senior researchers and technicians working in industry who are interested in the use of state-of-the-art numerical techniques in the

fields addressed here. Moreover, the book can be used as a textbook for master courses in Mathematics, Physics, or Engineering.

Middle Leadership Mastery Adam Robbins 2021-05-21 Never has there been a more crucial time to improve middle leadership. For many years school inspections have focused on data-driven outcomes and the role of senior leaders in driving school improvement; recently, however, the focus has shifted to curriculum and middle leadership. This has left middle leaders under increased pressure to be able to justify their actions and decisions. Instead of relying on generic leadership theories, Middle Leadership Mastery collates perspectives from psychology, sociology, cognitive science and Silicon Valley CEOs to share evidence-informed guidance on a wide range of topics - from designing a curriculum and quality assuring teaching to supporting staff and students in crisis and managing well-being. Adam Robbins draws on his 16 years' experience of teaching in a deprived area to illustrate his points with stories and anecdotes from the front line, demonstrating how middle leaders can better understand their context and deliver the best outcomes from a variety of starting points.

Silicon Optoelectronic Integrated Circuits Horst Zimmermann 2004-01-12 Explains the circuit design of silicon optoelectronic integrated circuits (OEICs), which are central to advances in wireless and wired telecommunications. The essential features of optical absorption are summarized, as is the device physics of photodetectors and their integration in modern bipolar, CMOS, and BiCMOS technologies. This information provides the basis for understanding the underlying mechanisms of the OEICs described in the main part of the book. In order to cover the topic comprehensively, Silicon Optoelectronic Integrated Circuits presents detailed descriptions of many OEICs for a wide variety of applications from various optical sensors, smart sensors, 3D-cameras, and optical storage systems (DVD) to fiber receivers in deep-sub-µm CMOS. Numerous detailed illustrations help to elucidate the material.

Object Recognition M. Bennamoun 2001-12-12 Automatie object recognition is a multidisciplinary research area using con cepts and tools from mathematics, computing, optics, psychology, pattern recognition, artificial intelligence and various other disciplines. The purpose of this research is to provide a set of coherent paradigms and algorithms for the purpose of designing systems that will ultimately emulate the functions performed by the Human Visual System (HVS). Hence, such systems should have the ability to recognise objects in two or three dimensions independently of their positions, orientations or scales in the image. The HVS is employed for tens of thousands of recognition events each day, ranging from navigation (through the recognition of landmarks or signs), right through to communication (through the recognition of characters or people themselves). Hence, the motivations behind the construction of recognition systems, which have the ability to function in the real world, is unquestionable and would serve industrial (e.g. quality control), military (e.g. automatie target recognition) and community needs (e.g. aiding the visually impaired). Scope, Content and Organisation of this Book This book provides a comprehensive, yet readable foundation to the field of object recognition from which research may be initiated or guided. It repre sents the culmination of research topics that I have either covered personally or in conjunction with my PhD students. These areas include image acqui sition, 3-D object reconstruction, object modelling, and the matching of ob jects, all of which are essential in the construction of an object recognition system.

Neural Networks for Perception: Human and machine perception Harry Wechsler 1992 The second comprehensive volume of Wechsler's series explores recent research in in neural networks that has advanced our understanding of human and machine

perception. Leading international researchers address both theoretical and practical issues related to the feasibility of neural network models to explain human perception and implement machine perception. The volume examines computational and adaptational problems related to the use of neural systems and discusses the corresponding hardware architectures needed to implement neural networks for perception.