High Dynamic Range Imaging Microelectronics Image Processing Computer Graphics

High Dynamic Range (HDR) Vision-Bernd Hoffelner 2007-02-16 This first comprehensive account of high-dynamic-range (HDR) vision focuses on HDR real-time, high-speed digital video recording and also systematically presents HDR video transmission and display. While the book conveys the overall picture of HDR vision, specific knowledge of microelectronics and image processing is not required. In this book, experts share their knowledge in this rapidly evolving art related to the single most powerful of our senses.

Vision Models for High Dynamic Range and Wide Colour Gamut Imaging-Marcelo Bertalmio 2019-11-06 To enhance the overall viewing experience (for cinema, TV, games, AR/VR) the media industry is continuously striving to improve image quality. Currently the emphasis is on High Dynamic Range (HDR) and Wide Colour Gamut (WCG) technologies, which yield images with greater contrast and more vivid colours. The uptake of these technologies, however, has been hampered by the significant challenge of understanding the science behind visual perception. Vision Models for High Dynamic Range and Wide Colour Gamut Imaging provides university researchers and graduate students in computer science, computer engineering, vision science, as well as industry R&D engineers, an insight into the science and methods for HDR and WCG. It presents the underlying principles and latest practical methods in a detailed and accessible way, highlighting how the use of vision models is a key element of all state-of-the-art methods for these emerging technologies. Presents the underlying vision science principles and models that are essential to the emerging technologies of HDR and WCG. Explores state-of-the-art techniques for tone and gamut mapping. Discusses open challenges and future directions of HDR and WCG research.

High Dynamic Range Video-Frédéric Dufaux 2016-04-27 At the time of rapid technological progress and uptake of High Dynamic Range (HDR) video content in numerous sectors, this book provides an overview of the key supporting technologies, discusses the effectiveness of various techniques, reviews the initial standardization efforts and explores new research directions in all aspects involved in HDR video systems. Topics addressed include content acquisition and production, tone mapping and inverse tone mapping operators, coding, quality of experience, and display technologies. This book also explores a number of applications using HDR video technologies in the automotive industry, medical imaging, spacecraft imaging, driving simulation and watermarking. By covering general to advanced topics, along with a broad and deep analysis, this book is suitable for both the researcher new or familiar to the area. With this book the reader will: Gain a broad understanding of all the elements in the HDR video processing chain. Learn the most recent results of ongoing research. Understand the challenges and perspectives for HDR video technologies. Covers a broad range of topics encompassing the whole processing chain in HDR video systems, from acquisition to display. Provides a comprehensive overview of this fast emerging topic. Presents upcoming applications taking advantages of HDR.

High Dynamic Range Imaging-Erik Reinhard 2010-05-28 High Dynamic Range Imaging, Second Edition, is an essential resource for anyone working with images, whether it is for computer graphics, film, video, photography, or lighting design. It describes HDR technology in its entirety and covers a wide-range of topics, from capture devices to tone reproduction and image-based lighting. The techniques described enable students to produce images that have a dynamic range much closer to that found in the real world, leading to an unparalleled visual experience. This revised edition includes new chapters on High Dynamic Range Video Encoding, High Dynamic Range Image Encoding, and High Dynamic Range Display Devices. All existing chapters have been updated to reflect the current state-of-the-art technology. As both an introduction to the field and an authoritative technical reference, this book is essential for anyone working with images, whether in computer graphics, film, video, photography, or lighting design. New material includes chapters on High Dynamic Range Video Encoding, High Dynamic Range Image Encoding, and High Dynamic Range Display Devices. Written by the inventors and initial implementors of High Dynamic Range Imaging, this book covers the basic concepts (including just enough about human vision to explain why HDR images are necessary), image capture, image encoding, file formats, display techniques, tone mapping for lower dynamic range display, and the use of HDR images and calculations in 3D rendering. Range and depth of coverage is good for the knowledgeable researcher as well as those who are just starting to learn about High Dynamic Range Imaging. The prior edition of this book included a DVD-ROM. Files from the DVD-ROM can be accessed at: http://www.erikreinhard.com/hdr_2nd/index.html.

The high dynamic range imaging pipeline-Gabriel Eilertsen 2018-05-15 Techniques for high dynamic range (HDR) imaging make it possible to capture and store an increased range of luminances and colors as compared to what can be achieved with a conventional camera. This high amount of image information can be used in a wide range of applications, such as HDR displays, image-based lighting, tone-mapping, computer vision, and post-processing operations. HDR imaging has been an important concept in research and development for many years. Within the last couple of years it has also reached the consumer market, e.g. with TV displays that are capable of reproducing an increased dynamic range and peak luminance. This thesis presents a set of technical contributions within the field of HDR imaging. First, the area of HDR video tone-mapping is thoroughly reviewed, evaluated and developed upon. A subjective comparison experiment of existing methods is performed, followed by the development of novel techniques that overcome many of the problems evidenced by the evaluation. Second, a large-scale objective comparison is presented, which evaluates existing techniques that are involved in HDR video distribution. From the results, a first open-source HDR video codec solution, Luma HDRv, is built using the best performing techniques. Third, a machine learning method is proposed for the purpose of reconstructing an HDR image from one single-exposure low dynamic range (LDR) image. The method is trained on a large set of HDR images, using recent advances in deep
learning, and the results increase the quality and performance significantly as compared to existing algorithms. The areas for which contributions are made can be closely inter-linked in the HDR imaging pipeline. Here, the thesis work helps in promoting efficient and high-quality HDR video distribution and display, as well as robust HDR image reconstruction from a single conventional LDR image.

Complete Guide to High Dynamic Range Digital Photography - Ferrell McCollough 2008 It's the latest and hottest technique, made possible only through digital. High Dynamic Range photography is the process of taking several pictures of a scene at various exposures, then merging them into one file. So the entire photo can look crisp and detailed, from highlights to midtones to shadows—and photographers needn’t sacrifice any part of their image. And the best way to master this exciting technology is with this thorough, easy-to-follow, and visually spectacular guide. No other title does justice to these cutting-edge techniques, which actually take the viewer into worlds far beyond normal photography—sometimes even beyond normal human perception. Ferrell McCollough, a widely respected photographer, pushes the boundaries and inspires others to pursue their artistic vision, too. The amazing results simply can’t be achieved any other way.

High Dynamic Range Imaging - Arnaud Darmont 2019

The HDR Book - Rafael Concepcion 2011-06-01 When it comes to HDR, only three key ingredients are needed: hardware, software, and post-processing technique. Hardware is simple—there are only a few things you need to set up and shoot an HDR series. Software is vastly improved, making it easier for anyone to create an HDR image. The hard part is the post-processing technique. There are only two options: hours and hours of experimentation or The HDR Book. Featuring real-world interviews with passionate HDR photographers, The HDR Book, by Rafael “RC” Concepcion, is more than a how-to and different from any other HDR book out there. While other books on HDR tend to lean toward the esoteric or formulaic, this book takes another approach. It's a complete and total HDR workshop that teaches you the one thing that most other books miss—once you’ve tone mapped your image with HDR software, you’re still not finished. Within the pages of this book, you’ll find 10 projects shot with everything from a point-and-shoot to a 37-megapixel, medium-format camera. The projects are designed to show you how the subtle differences in each scenario (lighting, subject, environment, etc.) dictate the post-processing needed to achieve one of the many final looks covered. You’ll learn not only the different tone map settings RC used, but you’ll also learn the final steps taken in Photoshop to complete each image. Then, you’ll recreate these looks yourself using the exact same RAW files that RC used! Plus, you get four bonus images to play with and create your own look. The end result: a more intrinsic understanding of the nuances of HDR that will help you create the images you’ve always wanted. Best of all, The HDR Book is written using the three top HDR processing programs in the industry today: Photoshop’s HDR Pro, Photomatix Pro, and HDR Efex Pro. No matter which program you use, you’ll be able to follow along and create your own stunning looks in no time.

Monochromatic HDR Photography: Shooting and Processing Black & White High Dynamic Range Photos - Harold Davis 2013-10-15 Update: The Kindle version of Monochromatic HDR Photography: Shooting and Processing Black & White High Dynamic Range Photos currently available for sale has been corrected and updated to address formatting issues. Monochromatic HDR Photography is the first book intended to show photographers how to work at the intersection of two up-and-coming trends that are at the forefront of the digital revolution: Black & White and High Dynamic Range imaging. The book explains techniques for extending dynamic range, monochromatic conversion methods and best practices where the two technologies intersect. Since successful digital monochromatic image creation generally requires using the color information inherent in RAW exposures, most case studies will be presented in full color. In addition, Monochromatic HDR Photography provides extensive coverage of the creative vision required to successfully create monochromatic HDR images and the workflow necessary to make art prints from this specialized image making technique.

High Dynamic Range Video - Alan Chalmers 2016-12-05 High Dynamic Range Video: Concepts, Technologies and Applications gives an introduction to a full range of topics within the end-to-end HDR video pipeline, covering the issues around capturing HDR and stereo HDR video, such as ghosting and use of legacy LDR systems, how HDR video can be manipulated, including real-time mixing, the very latest designs for HDR displays, HDR video on mobile devices, and the applications of HDR video. With this book, the reader will gain an overview of the current state-of-the-art of HDR video, learn the potential of HDR video to provide a step change to a wide range of imaging applications, and attain the knowledge needed to introduce HDR video in their own applications. Written by experts who have been actively researching High Dynamic Range Video Covers a full range of topics within the end-to-end HDR video pipeline Provides applications that demonstrate how HDR video can be applied

Creating HDR Photos - Harold Davis 2012 Presents a guide to the HDR workflow, describing how to choose subjects, process RAW files, and blend multiple exposures into a single HDR image using various software programs.

High Dynamic Range Video - Karol Myszkowski 2008 As new displays and cameras offer enhanced color capabilities, there is a need to extend the precision of digital content. High Dynamic Range (HDR) imaging encodes images and video with higher than normal 8 bit-per-color-channel precision, enabling representation of the complete color gamut and the full visible range of luminance. However, to realize transition from the traditional to HDRIimaging, it is necessary to develop imaging algorithms that work with the high-precision data. To make such algorithms effective and feasible in practice, it is necessary to take advantage of the limitations of the human visual system by aligning the data shortcomings to those of the human eye, thus limiting storage and processing precision. Therefore, human visual perception is the key component of the solutions we discuss in this book.
The Art and Science of HDR Imaging - John J. McCann 2011-11-07 Rendering High Dynamic Range (HDR) scenes on media with limited dynamic range began in the Renaissance whereby painters, then photographers, learned to use low-range spatial techniques to synthesize appearances, rather than to reproduce accurately the light from scenes. The Art and Science of HDR Imaging presents a unique scientific approach derived from artists’ understanding of painting, emphasizing spatial information in electronic imaging. Human visual appearance and reproduction rendition of the HDR world requires spatial-image processing to overcome the veiling glare limits of optical imaging, in eyes and in cameras. Illustrated in full colour throughout, including examples of fine-art paintings, HDR photography, and multiple exposure scenes; this book uses techniques to study the HDR properties of entire scenes, and measures the range of light of scenes and the range that cameras capture. It describes how electronic image processing has been used to render HDR scenes since 1967, and examines the great variety of HDR algorithms used today. Showing how spatial processes can mimic vision, and render scenes as artists do, the book also: Gives the history of HDR from artists’ spatial techniques to scientific image processing Measures and describes the limits of HDR scenes, HDR camera images, and the range of HDR appearances Offers a unique review of the entire family of Retinex image processing algorithms Describes the considerable overlap of HDR and Color Constancy: two sides of the same coin Explains the advantages of algorithms that replicate human vision in the processing of HDR scenes Provides extensive data to test algorithms and models of vision on an accompanying website www.wiley.com/go/mccannhdr

Computer Vision - ACCV 2010 - Ron Kimmel 2011-02-28 The four-volume set LNCS 6492-6495 constitutes the thoroughly refereed post-proceedings of the 10th Asian Conference on Computer Vision, ACCV 2009, held in Queenstown, New Zealand in November 2010. All together the four volumes present 206 revised papers selected from a total of 739 Submissions. All current issues in computer vision are addressed ranging from algorithms that attempt to automatically understand the content of images, optical methods coupled with computational techniques that enhance and improve images, and capturing and analyzing the world’s geometry while preparing the higher level image and shape understanding. Novel geometry techniques, statistical learning methods, and modern algebraic procedures are dealt with as well.

Advanced High Dynamic Range Imaging - Francesco Banterle 2011-02-10 Imaging techniques seek to simulate the array of light that reaches our eyes to provide the illusion of sensing scenes directly. Both photography and computer graphics deal with the generation of images. Both disciplines have to cope with the high dynamic range in the energy of visible light that human eyes can sense. Traditionally photography and computer graphics took different approaches to the high dynamic range problem. Work over the last ten years though has unified these disciplines and created powerful new tools for the creation of complex, compelling and realistic images. This book provides a practical introduction to the emerging new discipline of high dynamic range imaging that combines photography and computer graphics. By providing detailed equations and code, the book gives the reader the tools needed to experiment with new techniques for creating compelling images. A supplemental website contains downloads and additional information.

Computer Vision - ECCV 2014 Workshops - Lourdes Agapito 2015-03-19 The four-volume set LNCS 8925, 8926, 8927 and 8928 comprises the thoroughly refereed post-workshop proceedings of the Workshops that took place in conjunction with the 13th European Conference on Computer Vision, ECCV 2014, held in Zurich, Switzerland, in September 2014. The 203 workshop papers were carefully reviewed and selected for inclusion in the proceedings. They where presented at workshops with the following themes: where computer vision meets art; computer vision in vehicle technology; spontaneous facial behavior analysis; consumer depth cameras for computer vision; “chalearn” looking at people: pose, recovery, action/interaction, gesture recognition; video event categorization, tagging and retrieval towards big data; computer vision with local binary pattern variants; visual object tracking challenge; computer vision + ontology applies cross-disciplinary technologies; visual perception of affordance and functional visual primitives for scene analysis; graphical models in computer vision; light fields for computer vision; computer vision for road scene understanding and autonomous driving; soft biometrics; transferring and adapting source knowledge in computer vision; surveillance and re-identification; color and photometry in computer vision; assistive computer vision and robotics; computer vision problems in plant phenotyping; and non-rigid shape analysis and deformable image alignment. Additionally, a panel discussion on video segmentation is included.

Computer Vision - ACCV 2010 - Ron Kimmel 2011-03-14 The four-volume set LNCS 6492-6495 constitutes the thoroughly refereed post-proceedings of the 10th Asian Conference on Computer Vision, ACCV 2009, held in Queenstown, New Zealand in November 2010. All together the four volumes present 206 revised papers selected from a total of 739 Submissions. All current issues in computer vision are addressed ranging from algorithms that attempt to automatically understand the content of images, optical methods coupled with computational techniques that enhance and improve images, and capturing and analyzing the world’s geometry while preparing the higher level image and shape understanding. Novel geometry techniques, statistical learning methods, and modern algebraic procedures are dealt with as well.

Advanced Concepts for Intelligent Vision Systems - Jaques Blanc-Talon 2011-09-06 This book constitutes the refereed proceedings of the 13th International Conference on Advanced Concepts for Intelligent Vision Systems, ACIVS 2011, held in Ghent, Belgium, in August 2011. The 66 revised full papers presented were carefully reviewed and selected from 124 submissions. The papers are organized in topical sections on classification recognition, and tracking, segmentation, images analysis, image processing, video surveillance and biometrics, algorithms and optimization; and 3D, depth and scene understanding.

Computer Vision, Pattern Recognition, Image Processing, and Graphics - Renu Rameshan 2018-04-25 This book constitutes the refereed proceedings of the 6th National Conference on Computer Vision, Pattern Recognition, Image Processing, and Graphics, NCVPRIPG 2017, held in Mandi, India, in December 2017. The 48 revised full papers presented in this volume were carefully reviewed and selected from 147 submissions. The papers are organized in topical sections on video processing; image and signal processing;
Computer Vision - ACCV 2020 - Hiroshi Ishikawa 2021-02-26 The six volume set of LNCS 12622-12627 constitutes the proceedings of the 15th Asian Conference on Computer Vision, ACCV 2020, held in Kyoto, Japan, in November/December 2020.* The total of 254 contributions was carefully reviewed and selected from 768 submissions during two rounds of reviewing and improvement. The papers focus on the following topics: Part I: 3D computer vision; segmentation and grouping Part II: low-level vision, image processing; motion and tracking Part III: recognition and detection; optimization, statistical methods, and learning; robot vision Part IV: deep learning for computer vision, generative models for computer vision Part V: face, pose, action, and gesture; video analysis and event recognition; biomedical image analysis Part VI: applications of computer vision; vision for X; datasets and performance analysis *The conference was held virtually.

Pattern Recognition - Volker Roth 2017-09-06 This book constitutes the refereed proceedings of the 39th German Conference on Pattern Recognition, GCPR 2017, held in Basel, Switzerland, in September 2017. The 33 revised full papers presented were carefully reviewed and selected from 60 submissions. The papers are organized in topical sections on biomedical image processing and analysis; classification and detection; computational photography; image and video processing; machine learning and pattern recognition; mathematical foundations, statistical data analysis and models; motion and segmentation; pose, face and gesture; reconstruction and depth; and tracking.

Trends and Topics in Computer Vision - Kiriakos N. Kutulakos 2012-12-02 The two volumes LNCS 6553 and 6554 constitute the refereed post-proceedings of 7 workshops held in conjunction with the 11th European Conference on Computer Vision, held in Heraklion, Crete, Greece in September 2010. The 62 revised papers presented together with 2 invited talks were carefully reviewed and selected from numerous submissions. The second volume contains 34 revised papers selected from the following workshops: Workshop on color and Reflectance in Imaging and Computer Vision (CRICV 2010); Workshop on Media Retargeting (MRW 2010); Workshop on Reconstruction and Modeling of Large-Scale 3D Virtual Environments (RMLE 2010); and Workshop on Computer Vision on GPUs (CVGpu 2010).

Computer Vision - ACCV 2018 - C. V. Jawahar 2019-05-28 The six volume set LNCS 11361-11366 constitutes the proceedings of the 14th Asian Conference on Computer Vision, ACCV 2018, held in Perth, Australia, in December 2018. The total of 274 contributions was carefully reviewed and selected from 979 submissions during two rounds of reviewing and improvement. The papers focus on motion and tracking, segmentation and grouping, image-based modeling, deep learning, object recognition object recognition, object detection and categorization, vision and language, video analysis and event recognition, face and gesture analysis, statistical methods and learning, performance evaluation, medical image analysis, document analysis, optimization methods, RGBD and depth camera processing, robotic vision, applications of computer vision.

Computer Vision - ACCV 2007 - Yasushi Yagi 2007-11-14 This title is part of a two volume set that constitutes the refereed proceedings of the 8th Asian Conference on Computer Vision, ACCV 2007. Coverage in this volume includes shape and texture, face and gesture, camera networks, face/gesture/action detection and recognition, learning, motion and tracking, human pose estimation, matching, face/gesture/action detection and recognition, low level vision and photometry, motion and tracking, human detection, and segmentation.

The Art and Science of HDR Imaging - John J. McCann 2011-10-04 Rendering High Dynamic Range (HDR) scenes on media with limited dynamic range began in the Renaissance whereby painters, then photographers, learned to use low-range spatial techniques to synthesize appearances, rather than to reproduce accurately the light from scenes. The Art and Science of HDR Imaging presents a unique scientific approach derived from artists' understanding, emphasizing spatial information in electronic imaging. Human visual appearance and reproduction rendition of the HDR world requires spatial-image processing to overcome the veiling glare limits of optical imaging, in eyes and in cameras. Illustrated in full colour throughout, including examples of fine-art paintings, HDR photography, and multiple exposure scenes; this book uses techniques to study the HDR properties of entire scenes, and measures the range of light of scenes and the range that cameras capture. It describes how electronic image processing has been used to render HDR scenes since 1967, and examines the great variety of HDR algorithms used today. Showing how spatial processes can mimic vision, and render scenes as artists do, the book also: Gives the history of HDR from artists’ spatial techniques to scientific image processing. Measures and describes the limits of HDR scenes, HDR camera images, and the range of HDR appearances Offers a unique review of the entire family of Retinex image processing algorithms Describes the considerable overlap of HDR and Color Constancy: two sides of the same coin Explains the advantages of algorithms that replicate human vision in the processing of HDR scenes Provides extensive data to test algorithms and models of vision on an accompanying website www.wiley.com/go/mccannhdr

High Dynamic Range Digital Photography For Dummies - Robert Correll 2009-12-30 Each book covers all the necessary information a beginner needs to know about a particular topic, providing an index for easy reference and using the series' signature set of symbols to clue the reader in to key topics, categorized under such titles as Tip, Remember, Warning!, Technical Stuff and True Story.

High Dynamic Range Imaging, 2nd Edition - Erik Reinhard 2010 High Dynamic Range Imaging, Second Edition, is an essential resource for anyone working with images, whether it is for computer graphics, film, video, photography, or lighting design. It describes HDRI technology in its entirety and covers a wide-range of topics, from capture devices to tone reproduction and image-based lighting. The techniques described enable students to produce images that have a dynamic range much closer to that found in the real world, leading to an unparalleled visual experience. This revised edition includes new chapters on High Dynamic Range Video Encoding, High Dynamic Range Image Encoding, and High Dynamic Range Display Devices. All existing chapters have been updated to reflect the current state-of-the-art technology. As both an introduction to the field and an authoritative technical reference, this book is essential for anyone working with images, whether in computer graphics, film, video, photography, or lighting design. New material includes chapters on High Dynamic Range Video Encoding, High Dynamic Range Image Encoding, and High Dynamic Range Display Devices Written by the inventors and initial implementors of High Dynamic Range Imaging Covers the basic concepts (including just enough about human vision to explain why HDR images are necessary), image capture, image encoding, file formats, display techniques, tone mapping for lower dynamic range display, and the use of HDR images and calculations in 3D rendering Range and depth of coverage is good for the knowledgeable researcher as well as those who are just starting to learn about High Dynamic Range Imaging The prior edition of this book included a DVD-ROM. Files from the DVD-ROM can be accessed at: http://www.erikreinhard.com/hdr_2nd/index.html.

Computer Vision -- ECCV 2012, Workshops and Demonstrations - Andrea Fusiello 2012-09-26 The three volume set LNCS 7583, 7584 and 7585 comprises the Workshops and Demonstrations which took place in connection with the European Conference on Computer Vision, ECCV 2012, held in Firenze, Italy, in October 2012. The total of 179 workshop papers and 23 demonstration papers was carefully reviewed and selected for inclusion in the proceedings. They where held at workshops with the following themes: non-rigid shape analysis and deformable image alignment; visual analysis and geo-localization of large-scale imagery; Web-scale vision and social media; video event categorization, tagging and retrieval; re-identification; biological and computer vision interfaces; where computer vision meets art; consumer depth cameras for computer vision; unsolved problems in optical flow and stereo estimation; what's in a face?; color and photometry in computer vision; computer vision in vehicle technology: from earth to mars; parts and attributes; analysis and retrieval of tracked events and motion in imagery streams; action recognition and pose estimation in still images; higher-order models and global constraints in computer vision; information fusion in computer vision for concept recognition; 2.5D sensing technologies in motion; the quest for 3D; benchmarking facial image analysis technologies.

Computer Vision -- ACCV 2010 Workshops - Reinhard Koch 2011-09-15 The two-volume set LNCS 6468-6469 contains the carefully selected and reviewed papers presented at the eight workshops that were held in conjunction with the 10th Asian Conference on Computer Vision, in Queenstown, New Zealand, in November 2010. From a total of 167 submissions to all workshops, 89 papers were selected for publication. The contributions are grouped together according to the main workshops topics, which were: computational photography and aesthetics; computer vision in vehicle technology: from Earth to Mars; electronic cultural heritage; subspace based methods; video event categorization, tagging and retrieval; visual surveillance; application of computer vision for mixed and augmented reality.

Circuits at the Nanoscale - Krzysztof Iniewski 2018-10-08 Circuits for Emerging Technologies Beyond CMOS New exciting opportunities are abound in the field of body area networks, wireless communications, data networking, and optical imaging. In response to these developments, top-notch international experts in industry and academia present Circuits at the Nanoscale: Communications, Imaging, and Sensing. This volume, unique in both its scope and its focus, addresses the state-of-the-art in integrated circuit design in the context of emerging systems. A must for anyone serious about circuit design for future technologies, this book discusses emerging materials that can take system performance beyond standard CMOS. These include Silicon on Insulator (SOI), Silicon Germanium (SiGe), and Indium Phosphide (InP). Three-dimensional CMOS integration and co-integration with Microelectromechanical (MEMS) technology and radiation sensors are described as well. Topics in the book are divided into comprehensive sections on emerging design techniques, mixed-signal CMOS circuits, circuits for communications, and circuits for imaging and sensing. Dr. Krzysztof Iniewski is a director at CMOS Emerging Technologies, Inc., a consulting company in Vancouver,
British Columbia. His current research interests are in VLSI circuits for medical applications. He has published over 100 research papers in international journals and conferences, and he holds 18 international patents granted in the United States, Canada, France, Germany, and Japan. In this volume, he has assembled the contributions of over 60 world-reknown experts who are at the top of their field in the world of circuit design, advancing the bank of knowledge for all who work in this exciting and burgeoning area.

The HDRI Handbook 2.0-Christian Bloch 2013-01-01 ! BONUS DVD ONLY WITH THE PRINT EDITION (NOT AVAILABLE WITH eBOOKS) ! In 2007, The HDRI Handbook was the first book to present this revolutionary new field to a larger audience. These days HDRI is a fully mature technology available to everyone. Real estate and landscape photographers have adopted it as part of their regular workflow, it has become one of the hottest trends for ambitious amateurs and creative professionals alike, and the modern movie industry would be completely dysfunctional without it. Now The HDRI Handbook 2.0 redefines its own gold standard. It has been completely rewritten and is packed with practical hints and tips, background knowledge, reference tools, breathtaking artist portfolios, and inspiring interviews. The book includes dozens of new step-by-step tutorials. Beginners will get a methodically solid introduction and advanced readers will be able to refine their technique to perfection. Topics include:- Understanding the foundation of HDRI- Software comparisons and evaluations- Capturing HDR images: today and tomorrow- Tonemapping for creating superior prints- HDR image processing and compositing- Shooting and stitching HDR panoramas- Image-based lighting and CG rendering 2.0 updates include:- New cameras, sensors, and HDR beam splitter rigs- Open Camera Controller for endless auto-bracketing- Correct RAW pre-processing and ghost removal- Dozens of practical, easy-to-follow tutorials- A structured approach to tonemapping, inspired by Ansel Adams- Set etiquette and tips for capturing HDR panos for visual effects- Seven artist spotlights showing unique perspectives on HDRI- Seven crossword puzzles: a fun way to test yourself ! BONUS DVD ONLY WITH THE PRINT EDITION (NOT AVAILABLE WITH eBOOKS) !

Design and Implementation of Real-Time Multi-Sensor Vision Systems-Vladan Popovic 2017-07-03 This book discusses the design of multi-camera systems and their application to fields such as the virtual reality, gaming, film industry, medicine, automotive industry, drones, etc. The authors cover the basics of image formation, algorithms for stitching a panoramic image from multiple cameras, and multiple real-time hardware system architectures, in order to have panoramic videos. Several specific applications of multi-camera systems are presented, such as depth estimation, high dynamic range imaging, and medical imaging.

Computer Vision: Concepts, Methodologies, Tools, and Applications-Management Association, Information Resources 2018-02-02 The fields of computer vision and image processing are constantly evolving as new research and applications in these areas emerge. Staying abreast of the most up-to-date developments in this field is necessary in order to promote further research and apply these developments in real-world settings. Computer Vision: Concepts, Methodologies, Tools, and Applications is an innovative reference source for the latest academic material on development of computers for gaining understanding about videos and digital images. Highlighting a range of topics, such as computational models, machine learning, and image processing, this multi-volume book is ideally designed for academicians, technology professionals, students, and researchers interested in uncovering the latest innovations in the field.

CHIPS 2020 VOL. 2-Bernd Höflinginger 2015-09-19 The release of this second volume of CHIPS 2020 coincides with the 50th anniversary of Moore’s Law, a critical year marked by the end of the nanometer roadmap and by a significantly reduced annual rise in chip performance. At the same time, we are witnessing a data explosion in the Internet, which is consuming 40% more electrical power every year, leading to fears of a major blackout of the Internet by 2020. The messages of the first CHIPS 2020, published in 2012, concerned the realization of quantum steps for improving the energy efficiency of all chip functions. With this second volume, we review these messages and amplify upon the most promising directions: ultra-low-voltage electronics, nanoscale monolithic 3D integration, relevant-data, brain- and human-vision-inspired processing, and energy harvesting for chip autonomy. The team of authors, enlarged by more world leaders in low-power, monolithic 3D, video, and Silicon brains, presents new vistas in nanoelectronics, promising Moore-like exponential growth sustainable through to the 2030s.

Professional HDR Photography-Mark Chen 2013-10-01 Building on a professional photographer’s on-the-job experience using the high dynamic range (HDR) imaging technique, which captures an astounding range of tones that far exceeds the native abilities of any camera, this guide shows serious photographers how a more sophisticated approach to HDR can produce images that lack visual pretense, stand the test of time, and realistically capture details that would otherwise elude the photographer. It demonstrates the basic procedure for creating an HDR image step-by-step, then explores progressively more complex and refined techniques that can be applied as the scene dictates or the artist’s personal aesthetic requires. Ample image sequences with plenty of screen shots let the reader follow the entire process through from start to finish. Unique techniques are presented for the treatment of special subjects, ranging from landscapes to still lifes and portraits. Ultimately, the handbook demonstrates that HDR imaging is a powerful tool and the professional photographers who take the time to fully master its potential can mean substantial rewards, both creatively and financially.

Digital Cinematography-David Stump, ASC 2021-11-19 Today's successful cinematographer must be equal parts artist, technician, and businessperson. The cinematographer needs to master the arts of lighting, composition, framing and other aesthetic considerations, as well as the technology of digital cameras, recorders, and workflows, and must know how to choose the right tools (within their budget) to get the job done. David Stump's Digital Cinematography focuses on the tools and technology of the trade, looking at how digital cameras work, the ramifications of choosing one camera versus another, and how those choices help creative cinematographers to tell a story. This book empowers the reader to correctly choose the appropriate camera and workflow for their project from today's incredibly varied options, as well as understand the ins and outs of implementing those options. Veteran ASC cinematographer David Stump has updated
this edition with the latest technology for cameras, lenses, and recorders, as well as included a new section on future cinematographic trends. Ideal for advanced cinematography students as well as working professionals looking for a resource to stay on top of the latest trends, this book is a must read.

**Computer Vision - ACCV 2014 Workshops**
C. V. Jawahar 2015-04-11

The three-volume set, consisting of LNCS 9008, 9009, and 9010, contains carefully reviewed and selected papers presented at 15 workshops held in conjunction with the 12th Asian Conference on Computer Vision, ACCV 2014, in Singapore, in November 2014. The 153 full papers presented were selected from numerous submissions.

LNCS 9008 contains the papers selected for the Workshop on Human Gait and Action Analysis in the Wild, the Second International Workshop on Big Data in 3D Computer Vision, the Workshop on Deep Learning on Visual Data, the Workshop on Scene Understanding for Autonomous Systems, and the Workshop on Robust Local Descriptors for Computer Vision. LNCS 9009 contains the papers selected for the Workshop on Emerging Topics on Image Restoration and Enhancement, the First International Workshop on Robust Reading, the Second Workshop on User-Centred Computer Vision, the International Workshop on Video Segmentation in Computer Vision, the Workshop: My Car Has Eyes: Intelligent Vehicle with Vision Technology, the Third Workshop on E-Heritage, and the Workshop on Computer Vision for Affective Computing. LNCS 9010 contains the papers selected for the Workshop on Feature and Similarity for Computer Vision, the Third International Workshop on Intelligent Mobile and Egocentric Vision, and the Workshop on Human Identification for Surveillance.
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