

TITLE: Light Field Messaging With Deep Photographic Steganography
http://openaccess.thecvf.com/content_CVPR_2019/html/Wengrowski_Light_Field_Messaging_With_Deep_Photographic_Steganography_CVPR_2019_paper.html
AUTHORS: Eric Wengrowski, Kristin Dana
HIGHLIGHT: To learn this CDTF we introduce a dataset (Camera-Display 1M) of 1,000,000 camera-captured images collected from 25 camera-display pairs.

TITLE: Im2Pencil: Controllable Pencil Illustration From Photographs
http://openaccess.thecvf.com/content_CVPR_2019/html/Li_Im2Pencil_Controllable_Pencil_Illustration_From_Photographs_CVPR_2019_paper.html
AUTHORS: Yijun Li, Chen Fang, Aaron Hertzmann, Eli Shechtman, Ming-Hsuan Yang
HIGHLIGHT: We propose a high-quality photo-to-pencil translation method with fine-grained control over the drawing style.

TITLE: When Color Constancy Goes Wrong: Correcting Improperly White-Balanced Images
http://openaccess.thecvf.com/content_CVPR_2019/html/Afifi_When_Color_Constancy_Goes_Wrong_Correcting_Improperly_White-Balanced_Images_CVPR_2019_paper.html
AUTHORS: Mahmoud Afifi, Brian Price, Scott Cohen, Michael S. Brown
HIGHLIGHT: This paper introduces the first method to explicitly address this problem.

TITLE: Beyond Volumetric Albedo -- A Surface Optimization Framework for Non-Line-Of-Sight Imaging
http://openaccess.thecvf.com/content_CVPR_2019/html/Tsai_Beyond_Volumetric_Albedo_-_A_Surface_Optimization_Framework_for_Non-Line-Of-Sight_CVPR_2019_paper.html
AUTHORS: Chia-Yin Tsai, Aswin C. Sankaranarayanan, Ioannis Gkioulekas
HIGHLIGHT: We introduce an analysis-by-synthesis framework that can reconstruct complex shape and reflectance of an NLOS object.

TITLE: Reflection Removal Using a Dual-Pixel Sensor
http://openaccess.thecvf.com/content_CVPR_2019/html/Punnappurath_Reflection_Removal_Using_a_Dual-Pixel_Sensor_CVPR_2019_paper.html
AUTHORS: Abhijith Punnappurath, Michael S. Brown
HIGHLIGHT: In this paper, we show that most cameras have an overlooked mechanism that can greatly simplify this task.

TITLE: Practical Coding Function Design for Time-Of-Flight Imaging
http://openaccess.thecvf.com/content_CVPR_2019/html/Gutierrez-Barragan_Practical_Coding_Function_Design_for_Time-Of-Flight_Imaging_CVPR_2019_paper.html
AUTHORS: Felipe Gutierrez-Barragan, Syed Azer Reza, Andreas Velten, Mohit Gupta
HIGHLIGHT: We present a constrained optimization approach for designing practical coding functions that adhere to hardware constraints.

TITLE: Meta-SR: A Magnification-Arbitrary Network for Super-Resolution
http://openaccess.thecvf.com/content_CVPR_2019/html/Hu_Meta-SR_A_Magnification-Arbitrary_Network_for_Super-Resolution_CVPR_2019_paper.html
AUTHORS: Xuecai Hu, Haoyuan Mu, Xiangyu Zhang, Zilei Wang, Tieniu Tan, Jian Sun
HIGHLIGHT: In this work, we propose a novel method called Meta-SR to firstly solve super-resolution of arbitrary scale factor (including non-integer scale factors) with a single model.

TITLE: Polarimetric Camera Calibration Using an LCD Monitor
http://openaccess.thecvf.com/content_CVPR_2019/html/Wang_Polarimetric_Camera_Calibration_Using_an_LCD_Monitor_CVPR_2019_paper.html
AUTHORS: Zhixiang Wang, Yinqiang Zheng, Yung-Yu Chuang
HIGHLIGHT: In this paper, we propose to jointly calibrate the polarizer angles and the inverse CRF (ICRF) using a slightly adapted checker pattern displayed on a liquid crystal display (LCD) monitor.

TITLE: Fully Automatic Video Colorization With Self-Regularization and Diversity
http://openaccess.thecvf.com/content_CVPR_2019/html/Lei_Fully_Automatic_Video_Colorization_With_Self-Regularization_and_Diversity_CVPR_2019_paper.html
AUTHORS: Chenyang Lei, Qifeng Chen
HIGHLIGHT: We present a fully automatic approach to video colorization with self-regularization and diversity.

TITLE: Zoom to Learn, Learn to Zoom
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhang_Zoom_to_Learn_Learn_to_Zoom_CVPR_2019_paper.html

AUTHORS: Xuaner Zhang, Qifeng Chen, Ren Ng, Vladlen Koltun
HIGHLIGHT: This paper shows that when applying machine learning to digital zoom, it is beneficial to operate on real, RAW sensor data.

TITLE: Single Image Reflection Removal Beyond Linearity
http://openaccess.thecvf.com/content_CVPR_2019/html/Wen_Single_Image_Reflection_Removal_Beyond_Linearity_CVPR_2019_paper.html

AUTHORS: Qiang Wen, Yinjie Tan, Jing Qin, Wenxi Liu, Guoqiang Han, Shengfeng He
HIGHLIGHT: In this paper, we inject non-linearity into reflection removal from two aspects.

TITLE: Learning to Separate Multiple Illuminants in a Single Image
http://openaccess.thecvf.com/content_CVPR_2019/html/Hui_Learning_to_Separate_Multiple_Illuminants_in_a_Single_Image_CVPR_2019_paper.html

AUTHORS: Zhuo Hui, Ayan Chakrabarti, Kalyan Sunkavalli, Aswin C. Sankaranarayanan
HIGHLIGHT: We present a method to separate a single image captured under two illuminants, with different spectra, into the two images corresponding to the appearance of the scene under each individual illuminant.

TITLE: Shape Unicode: A Unified Shape Representation
http://openaccess.thecvf.com/content_CVPR_2019/html/Muralikrishnan_Shape_Unicode_A_Unified_Shape_Representation_CVPR_2019_paper.html

AUTHORS: Sanjeev Muralikrishnan, Vladimir G. Kim, Matthew Fisher, Siddhartha Chaudhuri
HIGHLIGHT: We propose a unified code for 3D shapes, dubbed Shape Unicode, that imbibes shape cues across these representations into a single code, and a novel framework to learn such a code space for any 3D shape dataset.

TITLE: Robust Video Stabilization by Optimization in CNN Weight Space
http://openaccess.thecvf.com/content_CVPR_2019/html/Yu_Robust_Video_Stabilization_by_Optimization_in_CNN_Weight_Space_CVPR_2019_paper.html

AUTHORS: Jiyang Yu, Ravi Ramamoorthi
HIGHLIGHT: We propose a novel robust video stabilization method.

TITLE: RL-GAN-Net: A Reinforcement Learning Agent Controlled GAN Network for Real-Time Point Cloud Shape Completion
http://openaccess.thecvf.com/content_CVPR_2019/html/Sarmad_RL-GAN-Net_A_Reinforcement_Learning_Agent_Controlled_GAN_Network_for_Real-Time_CVPR_2019_paper.html

AUTHORS: Muhammad Sarmad, Hyunjoo Jenny Lee, Young Min Kim
HIGHLIGHT: We present RL-GAN-Net, where a reinforcement learning (RL) agent provides fast and robust control of a generative adversarial network (GAN).

TITLE: Photo Wake-Up: 3D Character Animation From a Single Photo
http://openaccess.thecvf.com/content_CVPR_2019/html/Weng_Photo_Wake-Up_3D_Character_Animation_From_a_Single_Photo_CVPR_2019_paper.html

AUTHORS: Chung-Yi Weng, Brian Curless, Ira Kemelmacher-Shlizerman
HIGHLIGHT: We present a method and application for animating a human subject from a single photo.

TITLE: DeepLight: Learning Illumination for Unconstrained Mobile Mixed Reality
http://openaccess.thecvf.com/content_CVPR_2019/html/LeGendre_DeepLight_Learning_Illumination_for_Unconstrained_Mixed_Reality_CVPR_2019_paper.html

AUTHORS: Chloe LeGendre, Wan-Chun Ma, Graham Fyffe, John Flynn, Laurent Charbonnel, Jay Busch, Paul Debevec
HIGHLIGHT: We present a learning-based method to infer plausible high dynamic range (HDR), omnidirectional illumination given an unconstrained, low dynamic range (LDR) image from a mobile phone camera with a limited field of view (FOV).

TITLE: Iterative Residual CNNs for Burst Photography Applications
http://openaccess.thecvf.com/content_CVPR_2019/html/Kokkinos_Iterative_Residual_CNNs_for_Burst_Photography_Applications_CVPR_2019_paper.html

AUTHORS: Filippos Kokkinos, Stamatis Lefkimmiatis
HIGHLIGHT: In this work, we focus on the fact that every frame of a burst sequence can be accurately described by a forward (physical) model.

TITLE: Learning Implicit Fields for Generative Shape Modeling
http://openaccess.thecvf.com/content_CVPR_2019/html/Chen_Learning_Implicit_Fields_for_Generative_Shape_Modeling_CVPR_2019_paper.html

AUTHORS: Zhiqin Chen, Hao Zhang

HIGHLIGHT: We advocate the use of implicit fields for learning generative models of shapes and introduce an implicit field decoder, called IM-NET, for shape generation, aimed at improving the visual quality of the generated shapes.

TITLE: Reliable and Efficient Image Cropping: A Grid Anchor Based Approach
http://openaccess.thecvf.com/content_CVPR_2019/html/Zeng_Reliable_and_Efficient_Image_Cropping_A_Grid_Anchor_Based_Approach_CVPR_2019_paper.html

AUTHORS: Hui Zeng, Lida Li, Zisheng Cao, Lei Zhang

HIGHLIGHT: This work revisits the problem of image cropping, and presents a grid anchor based formulation by considering the special properties and requirements (e.g., local redundancy, content preservation, aspect ratio) of image cropping.

TITLE: Patch-Based Progressive 3D Point Set Upsampling
http://openaccess.thecvf.com/content_CVPR_2019/html/Yifan_Patch-Based_Progressive_3D_Point_Set_Upsampling_CVPR_2019_paper.html

AUTHORS: Wang Yifan, Shihao Wu, Hui Huang, Daniel Cohen-Or, Olga Sorkine-Hornung

HIGHLIGHT: We propose a series of architectural design contributions that lead to a substantial performance boost.

TITLE: High Flux Passive Imaging With Single-Photon Sensors
http://openaccess.thecvf.com/content_CVPR_2019/html/Ingle_High_Flux_Passive_Imaging_With_Single-Photon_Sensors_CVPR_2019_paper.html

AUTHORS: Atul Ingle, Andreas Velten, Mohit Gupta

HIGHLIGHT: We propose passive free-running SPAD (PF-SPAD) imaging, an imaging modality that uses SPADs for capturing 2D intensity images with unprecedented dynamic range under ambient lighting, without any active light source.

TITLE: Photon-Flooded Single-Photon 3D Cameras
http://openaccess.thecvf.com/content_CVPR_2019/html/Gupta_Photon-Flooded_Single-Photon_3D_Cameras_CVPR_2019_paper.html

AUTHORS: Anant Gupta, Atul Ingle, Andreas Velten, Mohit Gupta

HIGHLIGHT: In this paper, we address the following basic question: what is the optimal photon flux that a SPAD-based LiDAR should be operated in?

TITLE: Acoustic Non-Line-Of-Sight Imaging
http://openaccess.thecvf.com/content_CVPR_2019/html/Lindell_Acoustic_Non-Line-Of-Sight_Imaging_CVPR_2019_paper.html

AUTHORS: David B. Lindell, Gordon Wetzstein, Vladlen Koltun

HIGHLIGHT: We introduce acoustic NLOS imaging, which is orders of magnitude less expensive than most optical systems and captures hidden 3D geometry at longer ranges with shorter acquisition times compared to state-of-the-art optical methods.

TITLE: Steady-State Non-Line-Of-Sight Imaging
http://openaccess.thecvf.com/content_CVPR_2019/html/Chen_Steady-State_Non-Line-Of-Sight_Imaging_CVPR_2019_paper.html

AUTHORS: Wenzheng Chen, Simon Daneau, Fahim Mannan, Felix Heide

HIGHLIGHT: To tackle the shape-dependence of these variations, we propose a trainable architecture which learns to map diffuse indirect reflections to scene reflectance using only synthetic training data.

TITLE: A Theory of Fermat Paths for Non-Line-Of-Sight Shape Reconstruction
http://openaccess.thecvf.com/content_CVPR_2019/html/Xin_A_Theory_of_Fermat_Paths_for_Non-Line-Of-Sight_Shape_Reconstruction_CVPR_2019_paper.html

AUTHORS: Shumian Xin, Sotiris Nousias, Kiriakos N. Kutulakos, Aswin C. Sankaranarayanan, Srinivasa G. Narasimhan, Ioannis Gkioulekas

HIGHLIGHT: We present a novel theory of Fermat paths of light between a known visible scene and an unknown object not in the line of sight of a transient camera.

TITLE: End-To-End Projector Photometric Compensation
http://openaccess.thecvf.com/content_CVPR_2019/html/Huang_End-To-End_Projector_Photometric_Compensation_CVPR_2019_paper.html

AUTHORS: Bingyao Huang, Haibin Ling

HIGHLIGHT: In this paper, for the first time, we formulate the compensation problem as an end-to-end learning problem and propose a convolutional neural network, named CompenNet, to implicitly learn the complex compensation function.

TITLE: Bringing a Blurry Frame Alive at High Frame-Rate With an Event Camera
http://openaccess.thecvf.com/content_CVPR_2019/html/Pan_Bringing_a_Blurry_Frame_Alive_at_High_Frame-Rate_With_an_CVPR_2019_paper.html

AUTHORS: Liyuan Pan, Cedric Scheerlinck, Xin Yu, Richard Hartley, Miaomiao Liu, Yuchao Dai

HIGHLIGHT: In this paper, we propose a simple and effective approach, the Event-based Double Integral (EDI) model, to reconstruct a high frame-rate, sharp video from a single blurry frame and its event data.

TITLE: Bringing Alive Blurred Moments

http://openaccess.thecvf.com/content_CVPR_2019/html/Purohit_Bringing_Alive_Blurred_Moments_CVPR_2019_paper.html

AUTHORS: Kuldeep Purohit, Anshul Shah, A. N. Rajagopalan

HIGHLIGHT: We present a solution for the goal of extracting a video from a single motion blurred image to sequentially reconstruct the clear views of a scene as beheld by the camera during the time of exposure.

TITLE: Learning to Synthesize Motion Blur

http://openaccess.thecvf.com/content_CVPR_2019/html/Brooks_Learning_to_Synthesize_Motion_Blur_CVPR_2019_paper.html

AUTHORS: Tim Brooks, Jonathan T. Barron

HIGHLIGHT: We present a technique for synthesizing a motion blurred image from a pair of unblurred images captured in succession.

TITLE: Underexposed Photo Enhancement Using Deep Illumination Estimation

http://openaccess.thecvf.com/content_CVPR_2019/html/Wang_Underexposed_Photo_Enhancement_Using_Deep_Illumination_Estimation_CVPR_2019_paper.html

AUTHORS: Ruixing Wang, Qing Zhang, Chi-Wing Fu, Xiaoyong Shen, Wei-Shi Zheng, Jiaya Jia

HIGHLIGHT: This paper presents a new neural network for enhancing underexposed photos.

TITLE: Blind Visual Motif Removal From a Single Image

http://openaccess.thecvf.com/content_CVPR_2019/html/Hertz_Blind_Visual_Motif_Removal_From_a_Single_Image_CVPR_2019_paper.html

AUTHORS: Amir Hertz, Sharon Fogel, Rana Hanocka, Raja Giryes, Daniel Cohen-Or

HIGHLIGHT: This work proposes a deep learning based technique for blind removal of such objects.

TITLE: Non-Local Meets Global: An Integrated Paradigm for Hyperspectral Denoising

http://openaccess.thecvf.com/content_CVPR_2019/html/He_Non-Local_Meets_Global_An_Integrated_Paradigm_for_Hyperspectral_Denoising_CVPR_2019_paper.html

AUTHORS: Wei He, Quanming Yao, Chao Li, Naoto Yokoya, Qibin Zhao

HIGHLIGHT: In this paper, we claim that the HSI lies in a global spectral low-rank subspace, and the spectral subspaces of each full band patch groups should lie in this global low-rank subspace.

TITLE: Neural Rerendering in the Wild

http://openaccess.thecvf.com/content_CVPR_2019/html/Meshry_Neural_Rerendering_in_the_Wild_CVPR_2019_paper.html

AUTHORS: Moustafa Meshry, Dan B. Goldman, Sameh Khamis, Hugues Hoppe, Rohit Pandey, Noah Snavely, Ricardo Martin-Brualla

HIGHLIGHT: We explore total scene capture --- recording, modeling, and rerendering a scene under varying appearance such as season and time of day.

TITLE: GeoNet: Deep Geodesic Networks for Point Cloud Analysis

http://openaccess.thecvf.com/content_CVPR_2019/html/He_GeoNet_Deep_Geodesic_Networks_for_Point_Cloud_Analysis_CVPR_2019_paper.html

AUTHORS: Tong He, Haibin Huang, Li Yi, Yuqian Zhou, Chihao Wu, Jue Wang, Stefano Soatto

HIGHLIGHT: To demonstrate the applicability of learned geodesic-aware representations, we propose fusion schemes which use GeoNet in conjunction with other baseline or backbone networks, such as PU-Net and PointNet++, for down-stream point cloud analysis.

TITLE: MeshAdv: Adversarial Meshes for Visual Recognition

http://openaccess.thecvf.com/content_CVPR_2019/html/Xiao_MeshAdv_Adversarial_Meshes_for_Visual_Recognition_CVPR_2019_paper.html

AUTHORS: Chaowei Xiao, Dawei Yang, Bo Li, Jia Deng, Mingyan Liu

HIGHLIGHT: In this paper, we propose meshAdv to generate "adversarial 3D meshes" from objects that have rich shape features but minimal textural variation.

TITLE: Fast Spatially-Varying Indoor Lighting Estimation

http://openaccess.thecvf.com/content_CVPR_2019/html/Garon_Fast_Spatially-Varying_Indoor_Lighting_Estimation_CVPR_2019_paper.html

AUTHORS: Mathieu Garon, Kalyan Sunkavalli, Sunil Hadap, Nathan Carr, Jean-Francois Lalonde

HIGHLIGHT: We propose a real-time method to estimate spatially-varying indoor lighting from a single RGB image.

TITLE: Neural Illumination: Lighting Prediction for Indoor Environments
http://openaccess.thecvf.com/content_CVPR_2019/html/Song_Neural_Illumination_Lighting_Prediction_for_Indoor_Environments_CVPR_2019_paper.html

AUTHORS: Shuran Song, Thomas Funkhouser

HIGHLIGHT: Instead, we propose "Neural Illumination," a new approach that decomposes illumination prediction into several simpler differentiable sub-tasks: 1) geometry estimation, 2) scene completion, and 3) LDR-to-HDR estimation.

TITLE: Deep Sky Modeling for Single Image Outdoor Lighting Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Hold-Geoffroy_Deep_Sky_Modeling_for_Single_Image_Outdoor_Lighting_Estimation_CVPR_2019_paper.html

AUTHORS: Yannick Hold-Geoffroy, Akshaya Athawale, Jean-Francois Lalonde

HIGHLIGHT: We propose a data-driven learned sky model, which we use for outdoor lighting estimation from a single image.

TITLE: Depth-Attentional Features for Single-Image Rain Removal
http://openaccess.thecvf.com/content_CVPR_2019/html/Hu_Depth-Attentional_Features_for_Single-Image_Rain_Removal_CVPR_2019_paper.html

AUTHORS: Xiaowei Hu, Chi-Wing Fu, Lei Zhu, Pheng-Ann Heng

HIGHLIGHT: We performed various experiments to visually and quantitatively compare our method with several state-of-the-art methods to demonstrate its superiority over the others.

TITLE: Hyperspectral Image Reconstruction Using a Deep Spatial-Spectral Prior
http://openaccess.thecvf.com/content_CVPR_2019/html/Wang_Hyperspectral_Image_Reconstruction_Using_a_Deep_Spatial-Spectral_Prior_CVPR_2019_paper.html

AUTHORS: Lizhi Wang, Chen Sun, Ying Fu, Min H. Kim, Hua Huang

HIGHLIGHT: In this paper, we present a novel hyperspectral image reconstruction algorithm that substitutes the traditional hand-crafted prior with a data-driven prior, based on an optimization-inspired network.

TITLE: LiFF: Light Field Features in Scale and Depth
http://openaccess.thecvf.com/content_CVPR_2019/html/Dansereau_LiFF_Light_Field_Features_in_Scale_and_Depth_CVPR_2019_paper.html

AUTHORS: Donald G. Dansereau, Bernd Girod, Gordon Wetzstein

HIGHLIGHT: Building on spatio-angular imaging modalities offered by emerging light field cameras, we introduce a new and computationally efficient 4D light field feature detector and descriptor: LiFF.

TITLE: Deep Exemplar-Based Video Colorization
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhang_Deep_Exemplar-Based_Video_Colorization_CVPR_2019_paper.html

AUTHORS: Bo Zhang, Mingming He, Jing Liao, Pedro V. Sander, Lu Yuan, Amine Bermak, Dong Chen

HIGHLIGHT: To address this issue, we introduce a recurrent framework that unifies the semantic correspondence and color propagation steps.

TITLE: On Finding Gray Pixels
http://openaccess.thecvf.com/content_CVPR_2019/html/Qian_On_Finding_Gray_Pixels_CVPR_2019_paper.html

AUTHORS: Yanlin Qian, Joni-Kristian Kamarainen, Jarno Nikkanen, Jiri Matas

HIGHLIGHT: We propose a novel grayness index for finding gray pixels and demonstrate its effectiveness and efficiency in illumination estimation.

TITLE: Capture, Learning, and Synthesis of 3D Speaking Styles
http://openaccess.thecvf.com/content_CVPR_2019/html/Cudeiro_Capture_Learning_and_Synthesis_of_3D_Speaking_Styles_CVPR_2019_paper.html

AUTHORS: Daniel Cudeiro, Timo Bolkart, Cassidy Laidlaw, Anurag Ranjan, Michael J. Black

HIGHLIGHT: To address this, we introduce a unique 4D face dataset with about 29 minutes of 4D scans captured at 60 fps and synchronized audio from 12 speakers.

TITLE: Nesti-Net: Normal Estimation for Unstructured 3D Point Clouds Using Convolutional Neural Networks
http://openaccess.thecvf.com/content_CVPR_2019/html/Ben-Shabat_Nesti-Net_Normal_Estimation_for_Unstructured_3D_Point_Clouds_Using_Convolutional_CVPR_2019_paper.html

AUTHORS: Yizhak Ben-Shabat, Michael Lindenbaum, Anath Fischer

HIGHLIGHT: In this paper, we propose a normal estimation method for unstructured 3D point clouds.

TITLE: Ray-Space Projection Model for Light Field Camera
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhang_Ray-Space_Projection_Model_for_Light_Field_Camera_CVPR_2019_paper.html
AUTHORS: Qi Zhang, Jinbo Ling, Qing Wang, Jingyi Yu
HIGHLIGHT: In the paper, we propose a novel ray-space projection model to transform sets of rays captured by multiple light field cameras in term of the Plucker coordinates.

TITLE: Deep Geometric Prior for Surface Reconstruction
http://openaccess.thecvf.com/content_CVPR_2019/html/Williams_Deep_Geometric_Prior_for_Surface_Reconstruction_CVPR_2019_paper.html
AUTHORS: Francis Williams, Teseo Schneider, Claudio Silva, Denis Zorin, Joan Bruna, Daniele Panozzo
HIGHLIGHT: We propose the use of a deep neural network as a geometric prior for surface reconstruction.

TITLE: Analysis of Feature Visibility in Non-Line-Of-Sight Measurements
http://openaccess.thecvf.com/content_CVPR_2019/html/Liu_Analysis_of_Feature_Visibility_in_Non-Line-Of-Sight_Measurements_CVPR_2019_paper.html
AUTHORS: Xiaochun Liu, Sebastian Bauer, Andreas Velten
HIGHLIGHT: We formulate an equation describing a general Non-line-of-sight (NLOS) imaging measurement and analyze the properties of the measurement in the Fourier domain regarding the spatial frequencies of the scene it encodes.

TITLE: Hyperspectral Imaging With Random Printed Mask
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhao_Hyperspectral_Imaging_With_Random_Printed_Mask_CVPR_2019_paper.html
AUTHORS: Yuanyuan Zhao, Hui Guo, Zhan Ma, Xun Cao, Tao Yue, Xuemei Hu
HIGHLIGHT: In this paper, based on a simple but not widely noticed phenomenon that the color printer can print color masks with a large number of independent spectral transmission responses, we propose a simple and low-budget scheme to capture the hyperspectral images with a random mask printed by the consumer-level color printer.

TITLE: All-Weather Deep Outdoor Lighting Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhang_All-Weather_Deep_Outdoor_Lighting_Estimation_CVPR_2019_paper.html
AUTHORS: Jinsong Zhang, Kalyan Sunkavalli, Yannick Hold-Geoffroy, Sunil Hadap, Jonathan Eisenman, Jean-Francois Lalonde
HIGHLIGHT: We present a neural network that predicts HDR outdoor illumination from a single LDR image.

TITLE: Spectral Reconstruction From Dispersive Blur: A Novel Light Efficient Spectral Imager
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhao_Spectral_Reconstruction_From_Dispersive_Blur_A_Novel_Light_Efficient_Spectral_CVPR_2019_paper.html
AUTHORS: Yuanyuan Zhao, Xuemei Hu, Hui Guo, Zhan Ma, Tao Yue, Xun Cao
HIGHLIGHT: In this work, we propose a novel multispectral imaging technique, that could capture the multispectral images with a high light efficiency.

TITLE: Quasi-Unsupervised Color Constancy
http://openaccess.thecvf.com/content_CVPR_2019/html/Bianco_Quasi-Unsupervised_Color_Constancy_CVPR_2019_paper.html
AUTHORS: Simone Bianco, Claudio Cusano
HIGHLIGHT: We present here a method for computational color constancy in which a deep convolutional neural network is trained to detect achromatic pixels in color images after they have been converted to grayscale.

TITLE: Deep Defocus Map Estimation Using Domain Adaptation
http://openaccess.thecvf.com/content_CVPR_2019/html/Lee_Deep_Defocus_Map_Estimation_Using_Domain_Adaptation_CVPR_2019_paper.html
AUTHORS: Junyong Lee, Sungkil Lee, Sunghyun Cho, Seungyong Lee
HIGHLIGHT: In this paper, we propose the first end-to-end convolutional neural network (CNN) architecture, Defocus Map Estimation Network (DMENet), for spatially varying defocus map estimation.

TITLE: Using Unknown Occluders to Recover Hidden Scenes
http://openaccess.thecvf.com/content_CVPR_2019/html/Yedidia_Using_Unknown_Occluders_to_Recover_Hidden_Scenes_CVPR_2019_paper.html
AUTHORS: Adam B. Yedidia, Manel Baradad, Christos Thrampoulidis, William T. Freeman, Gregory W. Wornell
HIGHLIGHT: In this paper, we relax this often impractical assumption, extending the range of applications for passive occluder-based NLoS imaging systems.