TITLE: Pushing the Envelope for RGB-Based Dense 3D Hand Pose Estimation via Neural Rendering
http://openaccess.thecvf.com/content_CVPR_2019/html/Baek_Pushing_the_Envelope_for_RGB-Based_Dense_3D_Hand_Pose_Estimation_CVPR_2019_paper.html
AUTHORS: Seungryul Baek, Kwang In Kim, Tae-Kyun Kim
HIGHLIGHT: Each technical component above meaningfully improves the accuracy in the ablation study.

TITLE: Self-Supervised Learning of 3D Human Pose Using Multi-View Geometry
http://openaccess.thecvf.com/content_CVPR_2019/html/Kocabas_Self-Supervised_Learning_of_3D_Human_Pose_Using_Multi-View_Geometry_CVPR_2019_paper.html
AUTHORS: Muhammed Kocabas, Salih Karagoz, Emre Akbas
HIGHLIGHT: To address these problems, we present EpipolarPose, a self-supervised learning method for 3D human pose estimation, which does not need any 3D ground-truth data or camera extrinsics.

TITLE: FSA-Net: Learning Fine-Grained Structure Aggregation for Head Pose Estimation From a Single Image
http://openaccess.thecvf.com/content_CVPR_2019/html/Yang_FSA-Net_Learning_Fine-Grained_Structure_Aggregation_for_Head_Pose_Estimation_From_CVPR_2019_paper.html
AUTHORS: Tsun-Yi Yang, Yi-Ting Chen, Yen-Yu Lin, Yung-Yu Chuang
HIGHLIGHT: This paper proposes a method for head pose estimation from a single image.

TITLE: Dense 3D Face Decoding Over 2500FPS: Joint Texture & Shape Convolutional Mesh Decoders
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhou_Dense_3D_Face_Decoding_Over_2500FPS_Joint_Texture__Shape_CVPR_2019_paper.html
AUTHORS: Yuxiang Zhou, Jiankang Deng, Irene Kotsia, Stefanos Zafeiriou
HIGHLIGHT: In this paper, we present the first, to the best of our knowledge, non-linear 3DMMs by learning joint texture and shape auto-encoders using direct mesh convolutions.

TITLE: Does Learning Specific Features for Related Parts Help Human Pose Estimation?
http://openaccess.thecvf.com/content_CVPR_2019/html/Tang_Does_Learning_Specific_Features_for_Related_Parts_Help_Human_Pose_CVPR_2019_paper.html
AUTHORS: Wei Tang, Ying Wu
HIGHLIGHT: This potential issue drives us to raise an interesting question.

TITLE: Linkage Based Face Clustering via Graph Convolution Network
http://openaccess.thecvf.com/content_CVPR_2019/html/Wang_Linkage_Based_Face_Clustering_via_Graph_Convolution_Network_CVPR_2019_paper.html
AUTHORS: Zhongdao Wang, Liang Zheng, Yali Li, Shengjin Wang
HIGHLIGHT: In this paper, we present an accurate and scalable approach to the face clustering task.

TITLE: Towards High-Fidelity Nonlinear 3D Face Morphable Model
http://openaccess.thecvf.com/content_CVPR_2019/html/Tran_Towards_High-Fidelity_Nonlinear_3D_Face_Morphable_Model_CVPR_2019_paper.html
AUTHORS: Luan Tran, Feng Liu, Xiaoming Liu
HIGHLIGHT: To address this problem, this paper presents a novel approach to learn additional proxies as means to side-step strong regularizations, as well as, leverages to promote detailed shape/albedo.

TITLE: RegularFace: Deep Face Recognition via Exclusive Regularization
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhao_RegularFace_Deep_Face_Recognition_via_Exclusive_Regularization_CVPR_2019_paper.html
AUTHORS: Kai Zhao, Jingyi Xu, Ming-Ming Cheng
HIGHLIGHT: In this paper, we propose the `exclusive regularization' that focuses on the other aspect of discriminability -- the inter-class separability, which is neglected in many recent approaches.

TITLE: BridgeNet: A Continuity-Aware Probabilistic Network for Age Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Li_BridgeNet_A_Continuity-Aware_Probabilistic_Network_for_Age_Estimation_CVPR_2019_paper.html
AUTHORS: Wanhua Li, Jiwen Lu, Jianjiang Feng, Chunjing Xu, Jie Zhou, Qi Tian
HIGHLIGHT: In this paper, we propose BridgeNet for age estimation, which aims to mine the continuous relation between age labels effectively.

TITLE: GANFIT: Generative Adversarial Network Fitting for High Fidelity 3D Face Reconstruction

http://openaccess.thecvf.com/content_CVPR_2019/html/Gecer_GANFIT_Generative_Adversarial_Network_Fitting_for_High_Fidelity_3D_Face_CVPR_2019_paper.html
AUTHORS: Baris Gecer, Stylianos Ploumpis, Irene Kotsia, Stefanos Zafeiriou
HIGHLIGHT: In this paper, we take a radically different approach and harness the power of Generative Adversarial Networks (GANs) and DCNNs in order to reconstruct the facial texture and shape from single images.

TITLE: Improving the Performance of Unimodal Dynamic Hand-Gesture Recognition With Multimodal Training
http://openaccess.thecvf.com/content_CVPR_2019/html/Abavisani_Improving_the_Performance_of_Unimodal_Dynamic_Hand-Gesture_Recognition_With_Multimodal_CVPR_2019_paper.html
AUTHORS: Mahdi Abavisani, Hamid Reza Vaezi Joze, Vishal M. Patel
HIGHLIGHT: We present an efficient approach for leveraging the knowledge from multiple modalities in training unimodal 3D convolutional neural networks (3D-CNNs) for the task of dynamic hand gesture recognition.

TITLE: Learning to Reconstruct People in Clothing From a Single RGB Camera
http://openaccess.thecvf.com/content_CVPR_2019/html/Alldieck_Learning_to_Reconstruct_People_in_Clothing_From_a_Single_RGB_CVPR_2019_paper.html
AUTHORS: Thiemo Alldieck, Marcus Magnor, Bharat Lal Bhatnagar, Christian Theobalt, Gerard Pons-Moll
HIGHLIGHT: We present Octopus, a learning-based model to infer the personalized 3D shape of people from a few frames (1-8) of a monocular video in which the person is moving with a reconstruction accuracy of 4 to 5mm, while being orders of magnitude faster than previous methods.

TITLE: Distilled Person Re-Identification: Towards a More Scalable System
http://openaccess.thecvf.com/content_CVPR_2019/html/Wu_Distilled_Person_Re-Identification_Towards_a_More_Scalable_System_CVPR_2019_paper.html
AUTHORS: Ancong Wu, Wei-Shi Zheng, Xiaowei Guo, Jian-Huang Lai
HIGHLIGHT: To solve these problems in a unified system, we propose a Multi-teacher Adaptive Similarity Distillation Framework, which requires only a few labelled identities of target domain to transfer knowledge from multiple teacher models to a user-specified lightweight student model without accessing source domain data.

TITLE: UniformFace: Learning Deep Equidistributed Representation for Face Recognition
http://openaccess.thecvf.com/content_CVPR_2019/html/Duan_UniformFace_Learning_Deep_Equidistributed_Representation_for_Face_Recognition_CVPR_2019_paper.html
AUTHORS: Yueqi Duan, Jiwen Lu, Jie Zhou
HIGHLIGHT: In this paper, we propose a new supervision objective named uniform loss to learn deep equidistributed representations for face recognition.

TITLE: Semantic Graph Convolutional Networks for 3D Human Pose Regression
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhao_Semantic_Graph_Convolutional_Networks_for_3D_Human_Pose_Regression_CVPR_2019_paper.html
AUTHORS: Long Zhao, Xi Peng, Yu Tian, Mubbasir Kapadia, Dimitris N. Metaxas
HIGHLIGHT: In this paper, we study the problem of learning Graph Convolutional Networks (GCNs) for regression.

TITLE: Mask-Guided Portrait Editing With Conditional GANs
http://openaccess.thecvf.com/content_CVPR_2019/html/Gu_Mask-Guided_Portrait_Editing_With_Conditional_GANs_CVPR_2019_paper.html
AUTHORS: Shuyang Gu, Jianmin Bao, Hao Yang, Dong Chen, Fang Wen, Lu Yuan
HIGHLIGHT: In this paper, we argue about three issues in existing techniques: diversity, quality, and controllability for portrait synthesis and editing.

TITLE: Group Sampling for Scale Invariant Face Detection
http://openaccess.thecvf.com/content_CVPR_2019/html/Ming_Group_Sampling_for_Scale_Invariant_Face_Detection_CVPR_2019_paper.html
AUTHORS: Xiang Ming, Fangyun Wei, Ting Zhang, Dong Chen, Fang Wen
HIGHLIGHT: In this paper, we carefully examine the factors affecting face detection across a large range of scales, and conclude that the balance of training samples, including both positive and negative ones, at different scales is the key.

TITLE: Joint Representation and Estimator Learning for Facial Action Unit Intensity Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhang_Joint_Representation_and_Estimator_Learning_for_Facial_Action_Unit_Intensity_CVPR_2019_paper.html
AUTHORS: Yong Zhang, Baoyuan Wu, Weiming Dong, Zhifeng Li, Wei Liu, Bao-Gang Hu, Qiang Ji
HIGHLIGHT: In this paper, a novel general framework for AU intensity estimation is presented, which differs from traditional estimation methods in two aspects.

TITLE: Semantic Alignment: Finding Semantically Consistent Ground-Truth for Facial Landmark Detection
http://openaccess.thecvf.com/content_CVPR_2019/html/Liu_Semantic_Alignment_Finding_Semantically_Consistent_Ground-Truth_for_Facial_Landmark_Detection_CVPR_2019_paper.html
AUTHORS: Zhiwei Liu, Xiangyu Zhu, Guosheng Hu, Haiyun Guo, Ming Tang, Zhen Lei, Neil M. Robertson, Jinqiao Wang
HIGHLIGHT: In this paper, we propose a novel probabilistic model which introduces a latent variable, i.e. 'real' groundtruth which is semantically consistent, to optimize.

TITLE: LAEO-Net: Revisiting People Looking at Each Other in Videos
http://openaccess.thecvf.com/content_CVPR_2019/html/Marin-Jimenez_LAEO-Net_Revisiting_People_Looking_at_Each_Other_in_Videos_CVPR_2019_paper.html
AUTHORS: Manuel J. Marin-Jimenez, Vicky Kalogeiton, Pablo Medina-Suarez, Andrew Zisserman
HIGHLIGHT: For this purpose, we propose LAEO-Net, a new deep CNN for determining LAEO in videos.

TITLE: Robust Facial Landmark Detection via Occlusion-Adaptive Deep Networks
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhu_Robust_Facial_Landmark_Detection_via_Occlusion-Adaptive_Deep_Networks_CVPR_2019_paper.html
AUTHORS: Meilu Zhu, Daming Shi, Mingjie Zheng, Muhammad Sadiq
HIGHLIGHT: In this paper, we present a simple and effective framework called Occlusion-adaptive Deep Networks (ODN) with the purpose of solving the occlusion problem for facial landmark detection.

TITLE: Learning Individual Styles of Conversational Gesture
http://openaccess.thecvf.com/content_CVPR_2019/html/Ginosar_Learning_Individual_Styles_of_Conversational_Gesture_CVPR_2019_paper.html
AUTHORS: Shiry Ginosar, Amir Bar, Gefen Kohavi, Caroline Chan, Andrew Owens, Jitendra Malik
HIGHLIGHT: We present a method for cross-modal translation from "in-the-wild" monologue speech of a single speaker to their conversational gesture motion.

TITLE: Face Anti-Spoofing: Model Matters, so Does Data
http://openaccess.thecvf.com/content_CVPR_2019/html/Yang_Face_Anti-Spoofing_Model_Matters_so_Does_Data_CVPR_2019_paper.html
AUTHORS: Xiao Yang, Wenhan Luo, Linchao Bao, Yuan Gao, Dihong Gong, Shibao Zheng, Zhifeng Li, Wei Liu
HIGHLIGHT: In this paper, we present a data collection solution along with a data synthesis technique to simulate digital medium-based face spoofing attacks, which can easily help us obtain a large amount of training data well reflecting the real-world scenarios.

TITLE: Fast Human Pose Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhang_Fast_Human_Pose_Estimation_CVPR_2019_paper.html
AUTHORS: Feng Zhang, Xiatian Zhu, Mao Ye
HIGHLIGHT: In this work, we investigate the under-studied but practically critical pose model efficiency problem.

TITLE: Decorrelated Adversarial Learning for Age-Invariant Face Recognition
http://openaccess.thecvf.com/content_CVPR_2019/html/Wang_Decorrelated_Adversarial_Learning_for_Age-Invariant_Face_Recognition_CVPR_2019_paper.html
AUTHORS: Hao Wang, Dihong Gong, Zhifeng Li, Wei Liu
HIGHLIGHT: To implement this idea, we propose the Decorrelated Adversarial Learning (DAL) algorithm, where a Canonical Mapping Module (CMM) is introduced to find maximum correlation of the paired features generated by the backbone network, while the backbone network and the factorization module are trained to generate features reducing the correlation.

TITLE: Face Parsing With RoI Tanh-Warping
http://openaccess.thecvf.com/content_CVPR_2019/html/Lin_Face_Parsing_With_RoI_Tanh-Warping_CVPR_2019_paper.html
AUTHORS: Jinpeng Lin, Hao Yang, Dong Chen, Ming Zeng, Fang Wen, Lu Yuan
HIGHLIGHT: Inspired by the physiological vision system of human, we propose a novel RoI Tanh-warping operator that combines the central vision and the peripheral vision together.

TITLE: Multi-Person Articulated Tracking With Spatial and Temporal Embeddings
http://openaccess.thecvf.com/content_CVPR_2019/html/Jin_Multi-Person_Articulated_Tracking_With_Spatial_and_Temporal_Embeddings_CVPR_2019_paper.html
AUTHORS: Sheng Jin, Wentao Liu, Wanli Ouyang, Chen Qian
HIGHLIGHT: We propose a unified framework for multi-person pose estimation and tracking.

3

TITLE: Multi-Person Pose Estimation With Enhanced Channel-Wise and Spatial Information
http://openaccess.thecvf.com/content_CVPR_2019/html/Su_Multi-Person_Pose_Estimation_With_Enhanced_Channel-Wise_and_Spatial_Information_CVPR_2019_paper.html
AUTHORS: Kai Su, Dongdong Yu, Zhenqi Xu, Xin Geng, Changhu Wang
HIGHLIGHT: In this paper, we propose two novel modules to perform the enhancement of the information for the multi-person pose estimation.

TITLE: A Compact Embedding for Facial Expression Similarity
http://openaccess.thecvf.com/content_CVPR_2019/html/Vemulapalli_A_Compact_Embedding_for_Facial_Expression_Similarity_CVPR_2019_paper.html
AUTHORS: Raviteja Vemulapalli, Aseem Agarwala
HIGHLIGHT: Different from previous work, our goal is to describe facial expressions in a continuous fashion using a compact embedding space that mimics human visual preferences.

TITLE: Deep High-Resolution Representation Learning for Human Pose Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Sun_Deep_High-Resolution_Representation_Learning_for_Human_Pose_Estimation_CVPR_2019_paper.html
AUTHORS: Ke Sun, Bin Xiao, Dong Liu, Jingdong Wang
HIGHLIGHT: In this paper, we are interested in the human pose estimation problem with a focus on learning reliable high-resolution representations.

TITLE: Feature Transfer Learning for Face Recognition With Under-Represented Data
http://openaccess.thecvf.com/content_CVPR_2019/html/Yin_Feature_Transfer_Learning_for_Face_Recognition_With_Under-Represented_Data_CVPR_2019_paper.html
AUTHORS: Xi Yin, Xiang Yu, Kihyuk Sohn, Xiaoming Liu, Manmohan Chandraker
HIGHLIGHT: In this paper, we propose a center-based feature transfer framework to augment the feature space of under-represented subjects from the regular subjects that have sufficiently diverse samples.

TITLE: Unsupervised 3D Pose Estimation With Geometric Self-Supervision
http://openaccess.thecvf.com/content_CVPR_2019/html/Chen_Unsupervised_3D_Pose_Estimation_With_Geometric_Self-Supervision_CVPR_2019_paper.html
AUTHORS: Ching-Hang Chen, Ambrish Tyagi, Amit Agrawal, Dylan Drover, Rohith MV, Stefan Stojanov, James M. Rehg
HIGHLIGHT: We present an unsupervised learning approach to re- cover 3D human pose from 2D skeletal joints extracted from a single image.

TITLE: Efficient Decision-Based Black-Box Adversarial Attacks on Face Recognition
http://openaccess.thecvf.com/content_CVPR_2019/html/Dong_Efficient_Decision-Based_Black-Box_Adversarial_Attacks_on_Face_Recognition_CVPR_2019_paper.html
AUTHORS: Yinpeng Dong, Hang Su, Baoyuan Wu, Zhifeng Li, Wei Liu, Tong Zhang, Jun Zhu
HIGHLIGHT: In this paper, we evaluate the robustness of state-of-the-art face recognition models in the decision-based black-box attack setting, where the attackers have no access to the model parameters and gradients, but can only acquire hard-label predictions by sending queries to the target model.

TITLE: FA-RPN: Floating Region Proposals for Face Detection
http://openaccess.thecvf.com/content_CVPR_2019/html/Najibi_FA-RPN_Floating_Region_Proposals_for_Face_Detection_CVPR_2019_paper.html
AUTHORS: Mahyar Najibi, Bharat Singh, Larry S. Davis
HIGHLIGHT: We propose a novel approach for generating region proposals for performing face detection.

TITLE: Bayesian Hierarchical Dynamic Model for Human Action Recognition
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhao_Bayesian_Hierarchical_Dynamic_Model_for_Human_Action_Recognition_CVPR_2019_paper.html
AUTHORS: Rui Zhao, Wanru Xu, Hui Su, Qiang Ji
HIGHLIGHT: To address this issue, we propose a probabilistic model called Hierarchical Dynamic Model (HDM).

TITLE: Mixed Effects Neural Networks (MeNets) With Applications to Gaze Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Xiong_Mixed_Effects_Neural_Networks_MeNets_With_Applications_to_Gaze_Estimation_CVPR_2019_paper.html
AUTHORS: Yunyang Xiong, Hyunwoo J. Kim, Vikas Singh
HIGHLIGHT: The goal of this paper is to adapt these "mixed effects" ideas from statistics within a deep neural network architecture for gaze estimation, based on eye images.

TITLE: 3D Human Pose Estimation in Video With Temporal Convolutions and Semi-Supervised Training
http://openaccess.thecvf.com/content_CVPR_2019/html/Pavllo_3D_Human_Pose_Estimation_in_Video_With_Temporal_Convolutions_and_CVPR_2019_paper.html
AUTHORS: Dario Pavllo, Christoph Feichtenhofer, David Grangier, Michael Auli
HIGHLIGHT: In this work, we demonstrate that 3D poses in video can be effectively estimated with a fully convolutional model based on dilated temporal convolutions over 2D keypoints.

TITLE: Learning to Regress 3D Face Shape and Expression From an Image Without 3D Supervision
http://openaccess.thecvf.com/content_CVPR_2019/html/Sanyal_Learning_to_Regress_3D_Face_Shape_and_Expression_From_an_CVPR_2019_paper.html
AUTHORS: Soubhik Sanyal, Timo Bolkart, Haiwen Feng, Michael J. Black
HIGHLIGHT: To train a network without any 2D-to-3D supervision, we present RingNet, which learns to compute 3D face shape from a single image.

TITLE: PoseFix: Model-Agnostic General Human Pose Refinement Network
http://openaccess.thecvf.com/content_CVPR_2019/html/Moon_PoseFix_Model-Agnostic_General_Human_Pose_Refinement_Network_CVPR_2019_paper.html
AUTHORS: Gyeongsik Moon, Ju Yong Chang, Kyoung Mu Lee
HIGHLIGHT: In this paper, we propose a human pose refinement network that estimates a refined pose from a tuple of an input image and input pose.

TITLE: RepNet: Weakly Supervised Training of an Adversarial Reprojection Network for 3D Human Pose Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Wandt_RepNet_Weakly_Supervised_Training_of_an_Adversarial_Reprojection_Network_for_CVPR_2019_paper.html
AUTHORS: Bastian Wandt, Bodo Rosenhahn
HIGHLIGHT: We tackle the overfitting problem by ignoring 2D to 3D correspondences.

TITLE: Fast and Robust Multi-Person 3D Pose Estimation From Multiple Views
http://openaccess.thecvf.com/content_CVPR_2019/html/Dong_Fast_and_Robust_Multi-Person_3D_Pose_Estimation_From_Multiple_Views_CVPR_2019_paper.html
AUTHORS: Junting Dong, Wen Jiang, Qixing Huang, Hujun Bao, Xiaowei Zhou
HIGHLIGHT: We propose a fast and robust approach to solve this problem.

TITLE: Face-Focused Cross-Stream Network for Deception Detection in Videos
http://openaccess.thecvf.com/content_CVPR_2019/html/Ding_Face-Focused_Cross-Stream_Network_for_Deception_Detection_in_Videos_CVPR_2019_paper.html
AUTHORS: Mingyu Ding, An Zhao, Zhiwu Lu, Tao Xiang, Ji-Rong Wen
HIGHLIGHT: In this work, both problems are addressed.

TITLE: Unequal-Training for Deep Face Recognition With Long-Tailed Noisy Data
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhong_Unequal-Training_for_Deep_Face_Recognition_With_Long-Tailed_Noisy_Data_CVPR_2019_paper.html
AUTHORS: Yaoyao Zhong, Weihong Deng, Mei Wang, Jiani Hu, Jianteng Peng, Xunqiang Tao, Yaohai Huang
HIGHLIGHT: In this paper, we propose a training strategy that treats the head data and the tail data in an unequal way, accompanying with noise-robust loss functions, to take full advantage of their respective characteristics.

TITLE: T-Net: Parametrizing Fully Convolutional Nets With a Single High-Order Tensor
http://openaccess.thecvf.com/content_CVPR_2019/html/Kossaifi_T-Net_Parametrizing_Fully_Convolutional_Nets_With_a_Single_High-Order_Tensor_CVPR_2019_paper.html
AUTHORS: Jean Kossaifi, Adrian Bulat, Georgios Tzimiropoulos, Maja Pantic
HIGHLIGHT: In this paper, we propose to fully parametrize Convolutional Neural Networks (CNNs) with a single high-order, low-rank tensor.

TITLE: Hierarchical Cross-Modal Talking Face Generation With Dynamic Pixel-Wise Loss
http://openaccess.thecvf.com/content_CVPR_2019/html/Chen_Hierarchical_Cross-Modal_Talking_Face_Generation_With_Dynamic_Pixel-Wise_Loss_CVPR_2019_paper.html
AUTHORS: Lele Chen, Ross K. Maddox, Zhiyao Duan, Chenliang Xu
HIGHLIGHT: To avoid those pixel jittering problems and to enforce the network to focus on audiovisual-correlated regions, we propose a novel dynamically adjustable pixel-wise loss with an attention mechanism.

TITLE: 3D Guided Fine-Grained Face Manipulation
http://openaccess.thecvf.com/content_CVPR_2019/html/Geng_3D_Guided_Fine-Grained_Face_Manipulation_CVPR_2019_paper.html
AUTHORS: Zhenglin Geng, Chen Cao, Sergey Tulyakov
HIGHLIGHT: We present a method for fine-grained face manipulation.

TITLE: Neuro-Inspired Eye Tracking With Eye Movement Dynamics
http://openaccess.thecvf.com/content_CVPR_2019/html/Wang_Neuro-Inspired_Eye_Tracking_With_Eye_Movement_Dynamics_CVPR_2019_paper.html
AUTHORS: Kang Wang, Hui Su, Qiang Ji
HIGHLIGHT: To address this issue, we propose to leverage on eye movement dynamics inspired by neurological studies.

TITLE: Facial Emotion Distribution Learning by Exploiting Low-Rank Label Correlations Locally
http://openaccess.thecvf.com/content_CVPR_2019/html/Jia_Facial_Emotion_Distribution_Learning_by_Exploiting_Low-Rank_Label_Correlations_Locally_CVPR_2019_paper.html
AUTHORS: Xiuyi Jia, Xiang Zheng, Weiwei Li, Changqing Zhang, Zechao Li
HIGHLIGHT: Therefore, to depict facial expressions more accurately, this paper adopts a label distribution learning approach for emotion recognition that can address the ambiguity of "how to describe the expression" and proposes an emotion distribution learning method that exploits label correlations locally.

TITLE: Unsupervised Face Normalization With Extreme Pose and Expression in the Wild
http://openaccess.thecvf.com/content_CVPR_2019/html/Qian_Unsupervised_Face_Normalization_With_Extreme_Pose_and_Expression_in_the_CVPR_2019_paper.html
AUTHORS: Yichen Qian, Weihong Deng, Jiani Hu
HIGHLIGHT: To this end, we propose a Face Normalization Model (FNM) to generate a frontal, neutral expression, photorealistic face image for face recognition.

TITLE: Semantic Component Decomposition for Face Attribute Manipulation
http://openaccess.thecvf.com/content_CVPR_2019/html/Chen_Semantic_Component_Decomposition_for_Face_Attribute_Manipulation_CVPR_2019_paper.html
AUTHORS: Ying-Cong Chen, Xiaohui Shen, Zhe Lin, Xin Lu, I-Ming Pao, Jiaya Jia
HIGHLIGHT: In this paper, we address these issues by proposing a semantic component model.

TITLE: R3 Adversarial Network for Cross Model Face Recognition
http://openaccess.thecvf.com/content_CVPR_2019/html/Chen_R3_Adversarial_Network_for_Cross_Model_Face_Recognition_CVPR_2019_paper.html
AUTHORS: Ken Chen, Yichao Wu, Haoyu Qin, Ding Liang, Xuebo Liu, Junjie Yan
HIGHLIGHT: In this paper, we raise a new problem, namely cross model face recognition (CMFR), which has considerable economic and social significance.

TITLE: Disentangling Latent Hands for Image Synthesis and Pose Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Yang_Disentangling_Latent_Hands_for_Image_Synthesis_and_Pose_Estimation_CVPR_2019_paper.html
AUTHORS: Linlin Yang, Angela Yao
HIGHLIGHT: To better analyze these factors of variation, we propose the use of disentangled representations and a disentangled variational autoencoder (dVAE) that allows for specific sampling and inference of these factors.

TITLE: Generating Multiple Hypotheses for 3D Human Pose Estimation With Mixture Density Network
http://openaccess.thecvf.com/content_CVPR_2019/html/Li_Generating_Multiple_Hypotheses_for_3D_Human_Pose_Estimation_With_Mixture_CVPR_2019_paper.html
AUTHORS: Chen Li, Gim Hee Lee
HIGHLIGHT: In this paper, we propose a novel approach to generate multiple feasible hypotheses of the 3D pose from 2D joints.

TITLE: CrossInfoNet: Multi-Task Information Sharing Based Hand Pose Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Du_CrossInfoNet_Multi-Task_Information_Sharing_Based_Hand_Pose_Estimation_CVPR_2019_paper.html
AUTHORS: Kuo Du, Xiangbo Lin, Yi Sun, Xiaohong Ma
HIGHLIGHT: Our main contributions lie in designing a new pose regression network architecture named CrossInfoNet.

TITLE: P2SGrad: Refined Gradients for Optimizing Deep Face Models
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhang_P2SGrad_Refined_Gradients_for_Optimizing_Deep_Face_Models_CVPR_2019_paper.html
AUTHORS: Xiao Zhang, Rui Zhao, Junjie Yan, Mengya Gao, Yu Qiao, Xiaogang Wang, Hongsheng Li
HIGHLIGHT: This paper addresses this challenge by directly designing the gradients for training in an adaptive manner.

TITLE: High-Quality Face Capture Using Anatomical Muscles
http://openaccess.thecvf.com/content_CVPR_2019/html/Bao_High-Quality_Face_Capture_Using_Anatomical_Muscles_CVPR_2019_paper.html
AUTHORS: Michael Bao, Matthew Cong, Stephane Grabli, Ronald Fedkiw
HIGHLIGHT: Thus, we propose modifying a recently developed rather expressive muscle-based system in order to make it fully-differentiable; in fact, our proposed modifications allow this physically robust and anatomically accurate muscle model to conveniently be driven by an underlying blendshape basis.

TITLE: FML: Face Model Learning From Videos
http://openaccess.thecvf.com/content_CVPR_2019/html/Tewari_FML_Face_Model_Learning_From_Videos_CVPR_2019_paper.html
AUTHORS: Ayush Tewari, Florian Bernard, Pablo Garrido, Gaurav Bharaj, Mohamed Elgharib, Hans-Peter Seidel, Patrick Perez, Michael Zollhofer, Christian Theobalt
HIGHLIGHT: In contrast, we propose multi-frame video-based self-supervised training of a deep network that (i) learns a face identity model both in shape and appearance while (ii) jointly learning to reconstruct 3D faces.

TITLE: AdaCos: Adaptively Scaling Cosine Logits for Effectively Learning Deep Face Representations
http://openaccess.thecvf.com/content_CVPR_2019/html/Zhang_AdaCos_Adaptively_Scaling_Cosine_Logits_for_Effectively_Learning_Deep_Face_CVPR_2019_paper.html
AUTHORS: Xiao Zhang, Rui Zhao, Yu Qiao, Xiaogang Wang, Hongsheng Li
HIGHLIGHT: In this paper, we investigate in depth the effects of two important hyperparameters of cosine-based softmax losses, the scale parameter and angular margin parameter, by analyzing how they modulate the predicted classification probability.

TITLE: 3D Hand Shape and Pose Estimation From a Single RGB Image
http://openaccess.thecvf.com/content_CVPR_2019/html/Ge_3D_Hand_Shape_and_Pose_Estimation_From_a_Single_RGB_CVPR_2019_paper.html
AUTHORS: Liuhao Ge, Zhou Ren, Yuncheng Li, Zehao Xue, Yingying Wang, Jianfei Cai, Junsong Yuan
HIGHLIGHT: In contrast, we propose a Graph Convolutional Neural Network (Graph CNN) based method to reconstruct a full 3D mesh of hand surface that contains richer information of both 3D hand shape and pose.

TITLE: 3D Hand Shape and Pose From Images in the Wild
http://openaccess.thecvf.com/content_CVPR_2019/html/Boukhayma_3D_Hand_Shape_and_Pose_From_Images_in_the_Wild_CVPR_2019_paper.html
AUTHORS: Adnane Boukhayma, Rodrigo de Bem, Philip H.S. Torr
HIGHLIGHT: We present in this work the first end-to-end deep learning based method that predicts both 3D hand shape and pose from RGB images in the wild.

TITLE: Self-Supervised 3D Hand Pose Estimation Through Training by Fitting
http://openaccess.thecvf.com/content_CVPR_2019/html/Wan_Self-Supervised_3D_Hand_Pose_Estimation_Through_Training_by_Fitting_CVPR_2019_paper.html
AUTHORS: Chengde Wan, Thomas Probst, Luc Van Gool, Angela Yao
HIGHLIGHT: We present a self-supervision method for 3D hand pose estimation from depth maps.

TITLE: CrowdPose: Efficient Crowded Scenes Pose Estimation and a New Benchmark
http://openaccess.thecvf.com/content_CVPR_2019/html/Li_CrowdPose_Efficient_Crowded_Scenes_Pose_Estimation_and_a_New_Benchmark_CVPR_2019_paper.html
AUTHORS: Jiefeng Li, Can Wang, Hao Zhu, Yihuan Mao, Hao-Shu Fang, Cewu Lu
HIGHLIGHT: In this paper, we propose a novel and efficient method to tackle the problem of pose estimation in the crowd and a new dataset to better evaluate algorithms.

TITLE: Towards Social Artificial Intelligence: Nonverbal Social Signal Prediction in a Triadic Interaction
http://openaccess.thecvf.com/content_CVPR_2019/html/Joo_Towards_Social_Artificial_Intelligence_Nonverbal_Social_Signal_Prediction_in_a_CVPR_2019_paper.html
AUTHORS: Hanbyul Joo, Tomas Simon, Mina Cikara, Yaser Sheikh
HIGHLIGHT: We present a new research task and a dataset to understand human social interactions via computational methods, to ultimately endow machines with the ability to encode and decode a broad channel of social signals humans use.

TITLE: HoloPose: Holistic 3D Human Reconstruction In-The-Wild
http://openaccess.thecvf.com/content_CVPR_2019/html/Guler_HoloPose_Holistic_3D_Human_Reconstruction_In-The-Wild_CVPR_2019_paper.html
AUTHORS: Riza Alp Guler, Iasonas Kokkinos
HIGHLIGHT: We introduce HoloPose, a method for holistic monocular 3D human body reconstruction.

TITLE: Weakly-Supervised Discovery of Geometry-Aware Representation for 3D Human Pose Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Chen_Weakly-Supervised_Discovery_of_Geometry-Aware_Representation_for_3D_Human_Pose_Estimation_CVPR_2019_paper.html
AUTHORS: Xipeng Chen, Kwan-Yee Lin, Wentao Liu, Chen Qian, Liang Lin
HIGHLIGHT: In this work, we propose a geometry-aware 3D representation for the human pose to address this limitation by using multiple views in a simple auto-encoder model at the training stage and only 2D keypoint information as supervision.

TITLE: In the Wild Human Pose Estimation Using Explicit 2D Features and Intermediate 3D Representations
http://openaccess.thecvf.com/content_CVPR_2019/html/Habibie_In_the_Wild_Human_Pose_Estimation_Using_Explicit_2D_Features_CVPR_2019_paper.html
AUTHORS: Ikhsanul Habibie, Weipeng Xu, Dushyant Mehta, Gerard Pons-Moll, Christian Theobalt
HIGHLIGHT: 3D pose estimation algorithms trained on such data often have limited ability to generalize to real world scene diversity.

TITLE: Slim DensePose: Thrifty Learning From Sparse Annotations and Motion Cues
http://openaccess.thecvf.com/content_CVPR_2019/html/Neverova_Slim_DensePose_Thrifty_Learning_From_Sparse_Annotations_and_Motion_Cues_CVPR_2019_paper.html
AUTHORS: Natalia Neverova, James Thewlis, Riza Alp Guler, Iasonas Kokkinos, Andrea Vedaldi
HIGHLIGHT: In this work, we thus seek methods to significantly slim down the DensePose annotations, proposing more efficient data collection strategies.

TITLE: Self-Supervised Representation Learning From Videos for Facial Action Unit Detection
http://openaccess.thecvf.com/content_CVPR_2019/html/Li_Self-Supervised_Representation_Learning_From_Videos_for_Facial_Action_Unit_Detection_CVPR_2019_paper.html
AUTHORS: Yong Li, Jiabei Zeng, Shiguang Shan, Xilin Chen
HIGHLIGHT: In this paper, we aim to learn discriminative representation for facial action unit (AU) detection from large amount of videos without manual annotations.

TITLE: Combining 3D Morphable Models: A Large Scale Face-And-Head Model
http://openaccess.thecvf.com/content_CVPR_2019/html/Ploumpis_Combining_3D_Morphable_Models_A_Large_Scale_Face-And-Head_Model_CVPR_2019_paper.html
AUTHORS: Stylianos Ploumpis, Haoyang Wang, Nick Pears, William A. P. Smith, Stefanos Zafeiriou
HIGHLIGHT: In answering this question, we make two contributions.

TITLE: Boosting Local Shape Matching for Dense 3D Face Correspondence
http://openaccess.thecvf.com/content_CVPR_2019/html/Fan_Boosting_Local_Shape_Matching_for_Dense_3D_Face_Correspondence_CVPR_2019_paper.html
AUTHORS: Zhenfeng Fan, Xiyuan Hu, Chen Chen, Silong Peng
HIGHLIGHT: In this paper, we explicitly formulate the deformation as locally rigid motions guided by some seed points, and the formulated deformation satisfies coherent local motions everywhere on a face.

TITLE: Unsupervised Part-Based Disentangling of Object Shape and Appearance
http://openaccess.thecvf.com/content_CVPR_2019/html/Lorenz_Unsupervised_Part-Based_Disentangling_of_Object_Shape_and_Appearance_CVPR_2019_paper.html
AUTHORS: Dominik Lorenz, Leonard Bereska, Timo Milbich, Bjorn Ommer
HIGHLIGHT: We present an unsupervised approach for disentangling appearance and shape by learning parts consistently over all instances of a category.

TITLE: Monocular Total Capture: Posing Face, Body, and Hands in the Wild
http://openaccess.thecvf.com/content_CVPR_2019/html/Xiang_Monocular_Total_Capture_Posing_Face_Body_and_Hands_in_the_CVPR_2019_paper.html
AUTHORS: Donglai Xiang, Hanbyul Joo, Yaser Sheikh
HIGHLIGHT: We present the first method to capture the 3D total motion of a target person from a monocular view input.

TITLE: Expressive Body Capture: 3D Hands, Face, and Body From a Single Image
http://openaccess.thecvf.com/content_CVPR_2019/html/Pavlakos_Expressive_Body_Capture_3D_Hands_Face_and_Body_From_a_CVPR_2019_paper.html
AUTHORS: Georgios Pavlakos, Vasileios Choutas, Nima Ghorbani, Timo Bolkart, Ahmed A. A. Osman, Dimitrios Tzionas, Michael J. Black
HIGHLIGHT: To facilitate the analysis of human actions, interactions and emotions, we compute a 3D model of human body pose, hand pose, and facial expression from a single monocular image.

TITLE: Attribute-Aware Face Aging With Wavelet-Based Generative Adversarial Networks
http://openaccess.thecvf.com/content_CVPR_2019/html/Liu_Attribute-Aware_Face_Aging_With_Wavelet-Based_Generative_Adversarial_Networks_CVPR_2019_paper.html
AUTHORS: Yunfan Liu, Qi Li, Zhenan Sun
HIGHLIGHT: In this paper, we propose an attribute-aware face aging model with wavelet based Generative Adversarial Networks (GANs) to address the above issues.

TITLE: Noise-Tolerant Paradigm for Training Face Recognition CNNs
http://openaccess.thecvf.com/content_CVPR_2019/html/Hu_Noise-Tolerant_Paradigm_for_Training_Face_Recognition_CNNs_CVPR_2019_paper.html
AUTHORS: Wei Hu, Yangyu Huang, Fan Zhang, Ruirui Li
HIGHLIGHT: Kicking out wrong labels from large-scale FR datasets is still very expensive, although some cleaning approaches are proposed.

TITLE: Low-Rank Laplacian-Uniform Mixed Model for Robust Face Recognition
http://openaccess.thecvf.com/content_CVPR_2019/html/Dong_Low-Rank_Laplacian-Uniform_Mixed_Model_for_Robust_Face_Recognition_CVPR_2019_paper.html
AUTHORS: Jiayu Dong, Huicheng Zheng, Lina Lian
HIGHLIGHT: In this paper, we aim at recognizing identities from faces with varying levels of noises of various forms such as occlusion, pixel corruption, or disguise, and take improving the fitting ability of the error model as the key to addressing this problem.

TITLE: Generalizing Eye Tracking With Bayesian Adversarial Learning
http://openaccess.thecvf.com/content_CVPR_2019/html/Wang_Generalizing_Eye_Tracking_With_Bayesian_Adversarial_Learning_CVPR_2019_paper.html
AUTHORS: Kang Wang, Rui Zhao, Hui Su, Qiang Ji
HIGHLIGHT: To improve the generalization performance, we propose to incorporate adversarial learning and Bayesian inference into a unified framework.

TITLE: Local Relationship Learning With Person-Specific Shape Regularization for Facial Action Unit Detection
http://openaccess.thecvf.com/content_CVPR_2019/html/Niu_Local_Relationship_Learning_With_Person-Specific_Shape_Regularization_for_Facial_Action_CVPR_2019_paper.html
AUTHORS: Xuesong Niu, Hu Han, Songfan Yang, Yan Huang, Shiguang Shan
HIGHLIGHT: To resolve these issues, in this work, we propose a novel AU detection method by utilizing local information and the relationship of individual local face regions.

TITLE: Point-To-Pose Voting Based Hand Pose Estimation Using Residual Permutation Equivariant Layer
http://openaccess.thecvf.com/content_CVPR_2019/html/Li_Point-To-Pose_Voting_Based_Hand_Pose_Estimation_Using_Residual_Permutation_Equivariant_CVPR_2019_paper.html
AUTHORS: Shile Li, Dongheui Lee
HIGHLIGHT: In this paper, we present a novel deep learning hand pose estimation method for an unordered point cloud.

TITLE: Improving Few-Shot User-Specific Gaze Adaptation via Gaze Redirection Synthesis
http://openaccess.thecvf.com/content_CVPR_2019/html/Yu_Improving_Few-Shot_User-Specific_Gaze_Adaptation_via_Gaze_Redirection_Synthesis_CVPR_2019_paper.html
AUTHORS: Yu Yu, Gang Liu, Jean-Marc Odobez
HIGHLIGHT: In doing so, our contributions are threefold:(i) we design our gaze redirection framework from synthetic data, allowing us to benefit from aligned training sample pairs to predict accurate inverse mapping fields; (ii) we proposed a self-supervised approach for domain adaptation; (iii) we exploit the gaze redirection to improve the performance of person-specific gaze estimation.

TITLE: AdaptiveFace: Adaptive Margin and Sampling for Face Recognition
http://openaccess.thecvf.com/content_CVPR_2019/html/Liu_AdaptiveFace_Adaptive_Margin_and_Sampling_for_Face_Recognition_CVPR_2019_paper.html
AUTHORS: Hao Liu, Xiangyu Zhu, Zhen Lei, Stan Z. Li

HIGHLIGHT:		In this paper, we argue that the margin should be adapted to different classes.

TITLE:	Disentangled Representation Learning for 3D Face Shape
http://openaccess.thecvf.com/content_CVPR_2019/html/Jiang_Disentangled_Representation_Learning_for_3D_Face_Shape_CVPR_2019_paper.html
AUTHORS:		Zi-Hang Jiang, Qianyi Wu, Keyu Chen, Juyong Zhang
HIGHLIGHT:		In this paper, we present a novel strategy to design disentangled 3D face shape representation.

TITLE:	LBS Autoencoder: Self-Supervised Fitting of Articulated Meshes to Point Clouds
http://openaccess.thecvf.com/content_CVPR_2019/html/Li_LBS_Autoencoder_Self-Supervised_Fitting_of_Articulated_Meshes_to_Point_Clouds_CVPR_2019_paper.html
AUTHORS:		Chun-Liang Li, Tomas Simon, Jason Saragih, Barnabas Poczos, Yaser Sheikh
HIGHLIGHT:		We present LBS-AE; a self-supervised autoencoding algorithm for fitting articulated mesh models to point clouds.

TITLE:	PifPaf: Composite Fields for Human Pose Estimation
http://openaccess.thecvf.com/content_CVPR_2019/html/Kreiss_PifPaf_Composite_Fields_for_Human_Pose_Estimation_CVPR_2019_paper.html
AUTHORS:		Sven Kreiss, Lorenzo Bertoni, Alexandre Alahi
HIGHLIGHT:		We propose a new bottom-up method for multi-person 2D human pose estimation that is particularly well suited for urban mobility such as self-driving cars and delivery robots.