Refereed Publications (419)

Refereed journal articles (172)

1 2023 M. Lin, M. Chen, Y. Zhang, C. Shen, R. Ji, L. Cao (2023), "Super vision transformer", *Int'l J. Computer Vision*.

2 H. Xiong, H. Lu, C. Liu, L. Liu, C. Shen, Z. Cao (2023), "From open set to closed set: supervised spatial divide-and-conquer for object counting", *Int'l J. Computer Vision*.

3 Y. Yan, Y. Shu, S. Chen, J. Xue, C. Shen, H. Wang (2023), "SPL-Net: spatial-semantic patch learning network for facial attribute recognition with limited labeled data", *Int'l J. Computer Vision*.

4 B. Zhang, L. Liu, M. Phan, Z. Tian, C. Shen, Y. Liu (2023), "SegViT v2: exploring efficient and continual semantic segmentation with plain vision transformers", *Int'l J. Computer Vision*.

5 Y. Xi, H. Chen, N. Wang, P. Wang, Y. Zhang, C. Shen, Y. Liu (2023), "A dynamic feature interaction framework for multi-task visual perception", *Int'l J. Computer Vision*.

6 N. Sai, J. Bockman, H. Chen, N. Watson-Haigh, B. Xu, X. Feng, A. Piechatzek, C. Shen, M. Gilliham (2023), "SAI: an efficient and user-friendly tool for measurement of stomatal pores and density using deep computer vision", *New Phytologist*.

7 L. Sun, J. Bian, H. Zhan, W. Yin, I. Reid, C. Shen (2023), "SC-DepthV3: robust self-supervised monocular depth estimation for dynamic scenes", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

8 Y. Liu, J. Zhang, D. Peng, M. Huang, X. Wang, J. Tang, C. Huang, D. Lin, C. Shen, X. Bai, L. Jin (2023), "SPTS v2: single-point scene text spotting", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

9 J. Liu, B. Zhuang, P. Chen, C. Shen, J. Cai, M. Tan (2023), "Single-path bit sharing for automatic loss-aware model compression", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

10 Y. Xie, J. Zhang, Y. Xia, C. Shen (2023), "Learning from partially labeled data for multi-organ and tumor segmentation", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

11 2022 L. Wang, H. Zhang, Q. Xiao, H. Xu, C. Shen, X. Jin (2022), "Effective eyebrow matting with domain adaptation", *Computer Graphics Forum*.

12 B. Zhuang, C. Shen, M. Tan, P. Chen, L. Liu, I. Reid (2022), "Structured binary neural networks for image recognition", *Int'l J. Computer Vision*.

13 Y. Cai, Y. Liu, C. L. Jin, Y. Li, D. Ergu (2022), "Arbitrarily shaped scene text detection with dynamic convolution", *Pattern Recognition*.

14 L. Cheng, P. Fang, Y. Liang, L. Zhang, C. Shen, H. Wang (2022), "TSGB: target-selective gradient backprop for probing CNN visual saliency", *IEEE Trans. Image Processing*.

15 T. He, C. Shen, A. van den Hengel (2022), "Dynamic convolution for 3D point cloud instance segmentation", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

16 C. Zhang, Y. Cai, G. Lin, C. Shen (2022), "DeepEMD: differentiable earth mover's distance for few-shot learning", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

17 W. Yin, J. Zhang, O. Wang, S. Niklaus, S. Chen, Y. Liu, C. Shen (2022), "Towards accurate reconstruction of 3D scene shape from a single monocular image", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

18 Z. Tian, B. Zhang, H. Chen, C. Shen (2022), "Instance and panoptic segmentation using conditional convolutions", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

19 L. Sun, W. Yin, E. Xie, Z. Li, C. Sun, C. Shen (2022), "Improving monocular visual odometry using learned depth", *IEEE Trans. Robotics*.

20 X. Wang, R. Zhang, C. Shen, T. Kong (2022), "DenseCL: a simple framework for self-supervised dense visual pre-training", *Visual Informatics*.

21 2021 Y. Cui, D. Guo, Y. Shao, Z. Wang, C. Shen, L. Zhang, S. Chen (2021), "Joint classification and regression for visual tracking with fully convolutional Siamese networks", *Int'l J. Computer Vision*.

22 H. Zhang, Y. Li, H. Chen, C. Gong, Z. Bai, C. Shen (2021), "Memory-efficient hierarchical neural architecture search for image restoration", *Int'l J. Computer Vision*.

23 Q. Yan, D. Gong, Q. Shi, A. van den Hengel, C. Shen, I. Reid, Y. Zhang (2021), "A dual-attention-guided network for ghost-free high dynamic range imaging", *Int'l J. Computer Vision*.

24 C. Yu, C. Gao, J. Wang, G. Yu, C. Shen, N. Sang (2021), "BiSeNet v2: bilateral network with guided aggregation for real-time semantic segmentation", *Int'l J. Computer Vision*.

25 N. Wang, Y. Gao, H. Chen, P. Wang, Z. Tian, C. Shen, Y. Zhang (2021), "NAS-FCOS: efficient search for object detection architectures", *Int'l J. Computer Vision*.

26 J. Bian, H. Zhan, N. Wang, Z. Li, L. Zhang, C. Shen, M. Cheng, I. Reid (2021), "Unsupervised scale-consistent depth learning from video", *Int'l J. Computer Vision*.

27 Y. Liu, T. He, H. Chen, X. Wang, C. Luo, S. Zhang, C. Shen, L. Jin (2021), "Exploring the capacity of an orderless box discretization network for multi-orientation scene text detection", *Int'l J. Computer Vision*.

28 Y. Zhao, X. Yu, Y. Gao, C. Shen (2021), "Learning discriminative region representation for person retrieval", *Pattern Recognition*.

29 Y. Zhao, C. Shen, X. Yu, H. Chen, Y. Gao, S. Xiong (2021), "Learning deep part-aware embedding for person retrieval", *Pattern Recognition*.

30 L. Tian, P. Wang, G. Liang, C. Shen (2021), "An adversarial human pose estimation network injected with graph structure", *Pattern Recognition*.

31 Y. Xie, J. Zhang, Z. Liao, J. Verjans, C. Shen, Y. Xia (2021), "Intra- and inter-pair consistency for semi-supervised gland segmentation", *IEEE Trans. Image Processing*.

32 J. Bian, H. Zhan, N. Wang, T. Chin, C. Shen, I. Reid (2021), "Auto-rectify network for unsupervised indoor depth estimation", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

33 X. Wang, R. Zhang, C. Shen, T. Kong, L. Li (2021), "SOLO: a simple framework for instance segmentation", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

34 Y. Liu, C. Shen, L. Jin, T. He, P. Chen, C. Liu, H. Chen (2021), "ABCNet v2: adaptive bezier-curve network for real-time end-to-end text spotting", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

35 W. Yin, Y. Liu, C. Shen (2021), "Virtual normal: enforcing geometric constraints for accurate and robust depth prediction", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

36 P. Wang, H. Li, C. Shen (2021), "Towards end-to-end text spotting in natural scenes", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

37 W. Wang, E. Xie, X. Li, X. Liu, D. Liang, Z. Yang, T. Lu, C. Shen (2021), "PAN++: towards efficient and accurate end-to-end spotting of arbitrarily-shaped text", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

38 B. Zhuang, J. Liu, M. Tan, L. Liu, I. Reid, C. Shen (2021), "Effective training of convolutional neural networks with low-bitwidth weights and activations", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

39 2020 G. Pang, C. Shen, L. Cao, A. van den Hengel (2020), "Deep learning for anomaly detection: a review", *ACM Computing Surveys*.

40 Y. Dai, H. Lu, C. Shen (2020), "Towards light-weight portrait matting via parameter sharing", *Computer Graphics Forum*.

41 C. Luo, Q. Lin, Y. Liu, L. Jin, C. Shen (2020), "Separating content from style using adversarial learning for recognizing text in the wild", *Int'l J. Computer Vision*.

42 H. Xiong, Z. Cao, H. Lu, S. Madec, L. Liu, C. Shen (2020), "TasselNetv2: in-field counting of wheat spikes with context-augmented local regression networks", *Plant Methods*.

43 Y. Zhao, Y. Liu, C. Shen, Y. Gao, S. Xiong (2020), "MobileFAN: transferring deep hidden representation for face alignment", *Pattern Recognition*.

44 X. Zhang, R. Zhang, J. Cao, D. Gong, M. You, C. Shen (2020), "Part-guided attention learning for vehicle instance retrieval", *IEEE Trans. Intelligent Transportation Systems*.

45 G. Dong, Y. Yan, C. Shen, H. Wang (2020), "Real-time high-performance semantic image segmentation of urban street scenes", *IEEE Trans. Intelligent Transportation Systems*.

46 L. Zhang, P. Wang, H. Li, Z. Li, C. Shen, Y. Zhang (2020), "A robust attentional framework for license plate recognition in the wild", *IEEE Trans. Intelligent Transportation Systems*.

47 L. Liu, Z. Cao, H. Lu, H. Xiong, C. Shen (2020), "NSSNet: scale-aware object counting with non-scale suppression", *IEEE Trans. Circuits and Systems for Video Technology*.

48 L. Zhang, P. Wang, L. Liu, C. Shen, W. Wei, Y. Zhang, A. van den Hengel (2020), "Towards effective deep embedding for zero-shot learning", *IEEE Trans. Circuits and Systems for Video Technology*.

49 J. Zhang, Y. Xie, Z. Liao, G. Pang, J. Verjans, W. Li, Z. Sun, J. He, Y. Li, C. Shen, Y. Xia (2020), "Viral pneumonia screening on chest x-ray images using confidence-aware anomaly detection", *IEEE Trans. Medical Imaging*.

50 Y. Xie, J. Zhang, H. Lu, C. Shen, Y. Xia (2020), "SESV: accurate medical image segmentation by predicting and correcting errors", *IEEE Trans. Medical Imaging*.

51 Y. Xie, J. Zhang, Y. Xia, C. Shen (2020), "A mutual bootstrapping model for automated skin lesion segmentation and classification", *IEEE Trans. Medical Imaging*.

52 S. Zhang, Y. Liu, L. Jin, Z. Wei, C. Shen (2020), "OPMP: an omni-directional pyramid mask proposal network for arbitrary-shape scene text detection", *IEEE Trans. Multimedia*.

53 Y. Yan, Y. Huang, S. Chen, C. Shen, H. Wang (2020), "Joint deep learning of facial expression synthesis and recognition", *IEEE Trans. Multimedia*.

X. Peng, H. Zhu, J. Feng, C. Shen, H. Zhang, J. Zhou (2020), "Deep clustering with sample-assignment invariance prior", *IEEE Trans. Neural Networks and Learning Systems*.

D. Gong, Z. Zhang, Q. Shi, A. van den Hengel, C. Shen, Y. Zhang (2020), "Learning deep gradient descent optimization for image deconvolution", *IEEE Trans. Neural Networks and Learning Systems*.

L. Zhang, W. Wei, Q. Shi, C. Shen, A. van den Hengel, Y. Zhang (2020), "Accurate tensor completion via adaptive low-rank representation", *IEEE Trans. Neural Networks and Learning Systems*.

W. Liu, P. Zhang, X. Huang, J. Yang, C. Shen, I. Reid (2020), "Real-time image smoothing via iterative least squares", *ACM Trans. Graphics*.

J. Cao, Y. Guo, Q. Wu, C. Shen, J. Huang, M. Tan (2020), "Improving generative adversarial networks with local coordinate coding", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

H. Lu, Y. Dai, C. Shen, S. Xu (2020), "Index networks", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

Y. Liu, C. Shun, J. Wang, C. Shen (2020), "Structured knowledge distillation for dense prediction", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

Y. Zhou, R. Ji, J. Su, X. Sun, D. Meng, Y. Gao, C. Shen (2020), "Plenty is plague: fine-grained learning for visual question answering", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

L. Zhang, Z. Shi, J. Zhou, M. Cheng, Y. Liu, J. Bian, Z. Zeng, C. Shen (2020), "Ordered or orderless: a revisit for video based person re-identification", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

Y. Chen, C. Shen, H. Chen, X. Wei, L. Liu, J. Yang (2020), "Adversarial learning of structure-aware fully convolutional networks for landmark localization", *IEEE Trans. Pattern Analysis and Machine Intelligence* 42: 1654–1669.

2019

L. Zhang, P. Wang, C. Shen, L. Liu, W. Wei, Y. Zhang, A. van den Hengel (2019), "Adaptive importance learning for improving lightweight image super-resolution network", *Int'l J. Computer Vision*.

L. Zhang, W. Wei, Q. Shen, C. Shen, A. van den Hengel (2019), "Accurate imagery recovery using a multi-observation patch model", *Information Sciences*.

J. Zhang, Q. Wu, J. Zhang, C. Shen, J. Lu, Q. Wu (2019), "Heritage image annotation via collective knowledge", *Pattern Recognition*.

P. Wang, L. Liu, C. Shen, H. Shen (2019), "Order-aware convolutional pooling for video based action recognition", *Pattern Recognition*.

Z. Wu, C. Shen, A. van den Hengel (2019), "Wider or deeper: revisiting the ResNet model for visual recognition", *Pattern Recognition*.

Y. Zhao, C. Shen, H. Wang, S. Chen (2019), "Structural analysis of attributes for vehicle re-identification and retrieval", *IEEE Trans. Intelligent Transportation Systems*.

X. Wang, C. Shen, H. Li, S. Xu (2019), "Human detection aided by deeply learned semantic masks", *IEEE Trans. Circuits and Systems for Video Technology*.

L. Liu, H. Lu, H. Xiong, K. Xian, Z. Cao, C. Shen (2019), "Counting objects by blockwise classification", *IEEE Trans. Circuits and Systems for Video Technology*.

W. Liu, P. Zhang, X. Chen, C. Shen, X. Huang, J. Yang (2019), "Embedding bilateral filter in least squares for efficient edge-preserving image smoothing", *IEEE Trans. Circuits and Systems for Video Technology*.

H. Zhang, Y. Li, Y. Jiang, P. Wang, Q. Shen, C. Shen (2019), "Hyperspectral classification based on lightweight 3D-CNN with transfer learning", *IEEE Trans. Geoscience and Remote Sensing*.

X. Wei, P. Wang, L. Liu, C. Shen, J. Wu (2019), "Piecewise classifier mappings: learning fine-grained learners for novel categories with few examples", *IEEE Trans. Image Processing*.

P. Zhang, W. Liu, H. Lu, C. Shen (2019), "Salient object detection with lossless feature reflection and weighted structural loss", *IEEE Trans. Image Processing*.

X. Wei, H. Ye, X. Mu, J. Wu, C. Shen, Z. Zhou (2019), "Multiple instance learning with emerging novel class", *IEEE Trans. Knowledge and Data Engineering*.

J. Zhang, Y. Xie, Y. Xia, C. Shen (2019), "Attention residual learning for skin lesion classification", *IEEE Trans. Medical Imaging*.

T. Zhang, G. Lin, J. Cai, T. Shen, C. Shen, A. Kot (2019), "Decoupled spatial neural attention for weakly supervised semantic segmentation", *IEEE Trans. Multimedia*.

G. Lin, F. Liu, A. Milan, C. Shen, I. Reid (2019), "RefineNet: multi-path refinement networks for dense prediction", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

2018

L. Zhang, W. Wei, Y. Zhang, C. Shen, A. van den Hengel, Q. Shi (2018), "Cluster sparsity field: an internal hyperspectral imagery prior for reconstruction", *Int'l J. Computer Vision*.

H. Li, P. Wang, M. You, C. Shen (2018), "Reading car license plates using deep neural networks", *Image*

and Vision Computing.

82 X. Wei, C. Zhang, J. Wu, C. Shen, Z. Zhou (2018), "Unsupervised object discovery and co-localization by deep descriptor transforming", *Pattern Recognition*.

83 N. Zhuang, Y. Yan, S. Chen, H. Wang, C. Shen (2018), "Multi-label learning based deep transfer neural network for facial attribute classification", *Pattern Recognition*.

84 H. Li, P. Wang, C. Shen (2018), "Towards end-to-end car license plates detection and recognition with deep neural networks", *IEEE Trans. Intelligent Transportation Systems*.

85 M. You, Y. Zhang, C. Shen, X. Zhang (2018), "An extended filtered channel framework for pedestrian detection", *IEEE Trans. Intelligent Transportation Systems* 19: 1640–1651.

86 R. Yao, G. Lin, C. Shen, Y. Zhang, Q. Shi (2018), "Semantics-aware visual object tracking", *IEEE Trans. Circuits and Systems for Video Technology*.

87 L. Zhang, P. Wang, W. Wei, H. Lu, C. Shen, A. van den Hengel, Y. Zhang (2018), "Unsupervised domain adaptation using robust class-wise matching", *IEEE Trans. Circuits and Systems for Video Technology*.

88 Q. Hu, P. Wang, C. Shen, A. van den Hengel, F. Porikli (2018), "Pushing the limits of deep CNNs for pedestrian detection", *IEEE Trans. Circuits and Systems for Video Technology* 28.

89 H. Lu, C. Shen, Z. Cao, Y. Xiao, A. van den Hengel (2018), "An embarrassingly simple approach to visual domain adaptation", *IEEE Trans. Image Processing* 27: 3403–3417.

90 J. Zhang, Q. Wu, C. Shen, J. Zhang, J. Lu (2018), "Multi-label image classification with regional latent semantic dependencies", *IEEE Trans. Multimedia*.

91 G. Guo, H. Wang, C. Shen, Y. Yan, H. Liao (2018), "Automatic image cropping for visual aesthetic enhancement using deep neural networks and cascaded regression", *IEEE Trans. Multimedia*.

92 H. Liu, R. Ji, J. Wang, C. Shen (2018), "Ordinal constraint binary coding for approximate nearest neighbor search", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

93 P. Wang, Q. Wu, C. Shen, A. Dick, A. van den Hengel (2018), "FVQA: fact-based visual question answering", *IEEE Trans. Pattern Analysis and Machine Intelligence* 40: 2413–2427.

94 2017 Q. Wu, D. Teney, P. Wang, C. Shen, A. Dick, A. van den Hengel (2017), "Visual question answering: a survey of methods and datasets", *Computer Vision and Image Understanding*.

95 G. Lin, F. Liu, C. Shen, J. Wu, H. Shen (2017), "Structured learning of binary codes with column generation for optimizing ranking measures", *Int'l J. Computer Vision*.

96 Y. Li, W. Li, C. Shen (2017), "Removal of optically thick clouds from high-resolution satellite imagery using dictionary group learning and interdictionary nonlocal joint sparse coding", *IEEE J. Selected Topics in Applied Earth Observations and Remote Sensing*.

97 H. Lu, Z. Cao, Y. Xiao, B. Zhuang, C. Shen (2017), "TasselNet: counting maize tassels in the wild via local counts regression network", *Plant Methods*.

98 X. Wei, C. Xie, J. Wu, C. Shen (2017), "Mask-CNN: localizing parts and selecting descriptors for bird species categorization", *Pattern Recognition*.

99 R. Qiao, L. Liu, C. Shen, A. van den Hengel (2017), "Learning discriminative trajectorylet detector sets for accurate skeleton-based action recognition", *Pattern Recognition*.

100 L. Wu, C. Shen, A. van den Hengel (2017), "Deep linear discriminant analysis on Fisher networks: a hybrid architecture for person re-identification", *Pattern Recognition*.

101 Q. Hu, H. Wang, T. Li, C. Shen (2017), "Deep CNNs with spatially weighted pooling for fine-grained car recognition", *IEEE Trans. Intelligent Transportation Systems*.

102 Y. Cao, Z. Wu, C. Shen (2017), "Estimating depth from monocular images as classification using deep fully convolutional residual networks", *IEEE Trans. Circuits and Systems for Video Technology*.

103 B. Sheng, C. Shen, G. Lin, J. Li, W. Yang, C. Sun (2017), "Crowd counting via weighted VLAD on dense attribute feature maps", *IEEE Trans. Circuits and Systems for Video Technology*.

104 F. Liu, G. Lin, C. Shen (2017), "Discriminative training of deep fully-connected continuous CRF with task-specific loss", *IEEE Trans. Image Processing*.

105 Y. Cao, C. Shen, H. Shen (2017), "Exploiting depth from single monocular images for object detection and semantic segmentation", *IEEE Trans. Image Processing*.

106 F. Liu, G. Lin, R. Qiao, C. Shen (2017), "Structured learning of tree potentials in CRF for image segmentation", *IEEE Trans. Neural Networks and Learning Systems*.

107 G. Lin, C. Shen, A. van den Hengel, I. Reid (2017), "Exploring context with deep structured models for semantic segmentation", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

108 Q. Wu, C. Shen, P. Wang, A. Dick, A. van den Hengel (2017), "Image captioning and visual question answering based on attributes and external knowledge", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

109 L. Liu, P. Wang, C. Shen, L. Wang, A. van den Hengel, C. Wang, H. Shen (2017), "Compositional model based Fisher vector coding for image classification", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

110 L. Liu, C. Shen, A. van den Hengel (2017), "Cross-convolutional-layer pooling for image recognition", *IEEE Trans. Pattern Analysis and Machine Intelligence* 39: 2305–2313.

111 2016 S. Paisitkriangkrai, L. Wu, C. Shen, A. van den Hengel (2016), "Structured learning of metric ensembles with application to person re-identification", *Computer Vision and Image Understanding*.

112 Y. Li, L. Liu, C. Shen, A. van den Hengel (2016), "Mining mid-level visual patterns with deep CNN activations", *Int'l J. Computer Vision*.

113 P. Wang, C. Shen, A. van den Hengel, P. Torr (2016), "Efficient semidefinite branch-and-cut for MAP-MRF inference", *Int'l J. Computer Vision* 117: 269–289.

114 C. Zhang, C. Shen, T. Shen (2016), "Unsupervised feature learning for dense correspondences across scenes", *Int'l J. Computer Vision* 116: 90–107.

115 F. Liu, C. Shen, I. Reid, A. van den Hengel (2016), "Online unsupervised feature learning for visual tracking", *Image and Vision Computing*.

116 S. Wang, J. Lu, X. Gu, C. Shen, R. Xia, J. Yang (2016), "Canonical principal angles correlation analysis for two-view data", *J. Visual Communication and Image Representation*.

117 H. Li, F. Shen, C. Shen, Y. Yang, Y. Gao (2016), "Face recognition using linear representation ensembles", *Pattern Recognition*.

118 F. Shen, C. Shen, X. Zhou, Y. Yang, H. Shen (2016), "Face image classification by pooling raw features", *Pattern Recognition* 54: 94–103.

119 Q. Hu, S. Paisitkriangkrai, C. Shen, A. van den Hengel, F. Porikli (2016), "Fast detection of multiple objects in traffic scenes with a common detection framework", *IEEE Trans. Intelligent Transportation Systems* 17: 1002–1014.

120 P. Wang, Y. Cao, C. Shen, L. Liu, H. Shen (2016), "Temporal pyramid pooling based convolutional neural network for action recognition", *IEEE Trans. Circuits and Systems for Video Technology*.

121 R. Yao, Q. Shi, C. Shen, Y. Zhang, A. van den Hengel (2016), "Part-based robust tracking using online latent structured learning", *IEEE Trans. Circuits and Systems for Video Technology*.

122 L. Zhang, W. Wei, Y. Zhang, C. Shen, A. van den Hengel, Q. Shi (2016), "Dictionary learning for promoting structured sparsity in hyerpsectral compressive sensing", *IEEE Trans. Geoscience and Remote Sensing* 54: 7223–7235.

123 X. Zhao, X. Li, Z. Zhang, C. Shen, L. Gao, X. Li (2016), "Scalable linear visual feature learning via online parallel nonnegative matrix factorization", *IEEE Trans. Neural Networks and Learning Systems*.

124 P. Wang, C. Shen, A. van den Hengel, P. Torr (2016), "Large-scale binary quadratic optimization using semidefinite relaxation and applications", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

125 F. Liu, C. Shen, G. Lin, I. Reid (2016), "Learning depth from single monocular images using deep convolutional neural fields", *IEEE Trans. Pattern Analysis and Machine Intelligence*.

126 X. Li, C. Shen, A. Dick, Z. Zhang, Y. Zhuang (2016), "Online metric-weighted linear representations for robust visual tracking", *IEEE Trans. Pattern Analysis and Machine Intelligence* 38: 931–950.

127 S. Paisitkriangkrai, C. Shen, A. van den Hengel (2016), "Pedestrian detection with spatially pooled features and structured ensemble learning", *IEEE Trans. Pattern Analysis and Machine Intelligence* 38: 1243–1257.

128 L. Liu, L. Wang, C. Shen (2016), "A generalized probabilistic framework for compact codebook creation", *IEEE Trans. Pattern Analysis and Machine Intelligence* 38: 224–237.

129 2015 M. Harandi, R. Hartley, C. Shen, B. Lovell, C. Sanderson (2015), "Extrinsic methods for coding and dictionary learning on Grassmann manifolds", *Int'l J. Computer Vision* 114: 113–136.

130 F. Liu, G. Lin, C. Shen (2015), "CRF learning with CNN features for image segmentation", *Pattern Recognition* 48: 2983–2992.

131 F. Shen, C. Shen, Q. Shi, A. van den Hengel, Z. Tang, H. Shen (2015), "Hashing on nonlinear manifolds", *IEEE Trans. Image Processing* 24: 1839–1851.

132 H. Li, C. Shen, A. van den Hengel, Q. Shi (2015), "Worst-case linear discriminant analysis as scalable semidefinite feasibility problems", *IEEE Trans. Image Processing* 24: 2382–2392.

133 L. Luo, C. Shen, X. Liu, C. Zhang (2015), "A computational model of the short-cut rule for 2D shape decomposition", *IEEE Trans. Image Processing* 24.

134 G. Lin, C. Shen, A. van den Hengel (2015), "Supervised hashing using graph cuts and boosted decision trees", *IEEE Trans. Pattern Analysis and Machine Intelligence* 37: 2317–2331.

135 2014 F. Shen, C. Shen, R. Hill, A. van den Hengel, Z. Tang (2014), "Fast approximate l_∞ minimization: Speeding up robust regression", *Computational Statistics and Data Analysis* 77: 25–37.

136 F. Liu, L. Zhou, C. Shen, J. Yin (2014), "Multiple kernel learning in the primal for multi-modal Alzheimer's disease classification", *IEEE J. Biomedical and Health Informatics*.

137 Y. Lu, L. Wang, J. Lu, J. Yang, C. Shen (2014), "Multiple kernel clustering based on centered kernel alignment", *Pattern Recognition* 47: 3656–3664.

138 S. Paisitkriangkrai, C. Shen, A. van den Hengel (2014), "Large-margin learning of compact binary image encodings", *IEEE Trans. Image Processing* 23: 4041–4054.

139 Y. Yan, C. Shen, H. Wang (2014), "Efficient semidefinite spectral clustering via Lagrange duality", *IEEE Trans. Image Processing* 23: 3522–3534.

140 Y. Li, W. Jia, C. Shen, A. van den Hengel (2014), "Characterness: An indicator of text in the wild", *IEEE Trans. Image Processing* 23: 1666–1677.

141 X. Li, W. Hu, C. Shen, A. Dick, Z. Zhang (2014), "Context-aware hypergraph construction for robust spectral clustering", *IEEE Trans. Knowledge and Data Engineering* 26: 2588–2597.

142 S. Paisitkriangkrai, C. Shen, A. van den Hengel (2014), "Asymmetric pruning for learning cascade detectors", *IEEE Trans. Multimedia* 16: 1254–1267.

143 C. Shen, J. Kim, F. Liu, L. Wang, A. van den Hengel (2014), "Efficient dual approach to distance metric learning", *IEEE Trans. Neural Networks and Learning Systems* 25: 394–406.

144 S. Paisitkriangkrai, C. Shen, A. van den Hengel (2014), "A scalable stage-wise approach to large-margin multi-class loss based boosting", *IEEE Trans. Neural Networks and Learning Systems* 25: 1002–1013.

145 S. Paisitkriangkrai, C. Shen, Q. Shi, A. van den Hengel (2014), "RandomBoost: Simplified multi-class boosting through randomization", *IEEE Trans. Neural Networks and Learning Systems* 25: 764–779.

146 C. Shen, G. Lin, A. van den Hengel (2014), "StructBoost: Boosting methods for predicting structured output variables", *IEEE Trans. Pattern Analysis and Machine Intelligence* 36: 2089–2103.

147 L. Wang, L. Zhou, C. Shen, L. Liu, H. Liu (2014), "A hierarchical word-merging algorithm with class separability measure", *IEEE Trans. Pattern Analysis and Machine Intelligence* 36: 417–435.

148 2013 C. Shen, P. Wang, S. Paisitkriangkrai, A. van den Hengel (2013), "Training effective node classifiers for cascade classification", *Int'l J. Computer Vision* 103: 326–347.

149 C. Shen, H. Li, A. van den Hengel (2013), "Fully corrective boosting with arbitrary loss and regularization", *Neural Networks* 48: 44–58.

150 X. Li, A. Dick, C. Shen, Z. Zhang, A. van den Hengel, H. Wang (2013), "Visual tracking with spatio-temporal Dempster-Shafer information fusion", *IEEE Trans. Image Processing* 22: 3028–3040.

151 F. Shen, C. Shen, A. van den Hengel, Z. Tang (2013), "Approximate least trimmed sum of squares fitting and applications in image analysis", *IEEE Trans. Image Processing* 22: 1836–1847.

152 X. Li, W. Hu, C. Shen, Z. Zhang, A. Dick, A. van den Hengel (2013), "A survey of appearance models in visual object tracking", *ACM Trans. Intelligent Systems and Technology* 4.

153 L. Luo, C. Shen, C. Zhang, A. van den Hengel (2013), "Shape similarity analysis by self-tuning locally constrained mixed-diffusion", *IEEE Trans. Multimedia* 15: 1174–1183.

154 X. Li, A. Dick, C. Shen, A. van den Hengel, H. Wang (2013), "Incremental learning of 3D-DCT compact representations for robust visual tracking", *IEEE Trans. Pattern Analysis and Machine Intelligence* 35: 863–881.

155 2012 C. Shen, J. Kim, L. Wang, A. van den Hengel (2012), "Positive semidefinite metric learning using boosting-like algorithms", *J. Machine Learning Research* 13: 1007–1036.

156 P. Wang, C. Shen, N. Barnes, H. Zheng (2012), "Fast and robust object detection using asymmetric totally-corrective boosting", *IEEE Trans. Neural Networks and Learning Systems* 23: 33–46.

157 C. Shen, P. Wang, F. Shen, H. Wang (2012), "UBoost: Boosting with the Universum", *IEEE Trans. Pattern Analysis and Machine Intelligence* 34: 825–832.

158 2011 C. Shen, S. Paisitkriangkrai, J. Zhang (2011), "Efficiently learning a detection cascade with sparse eigenvectors", *IEEE Trans. Image Processing* 20: 22–35.

159 S. Paisitkriangkrai, C. Shen, J. Zhang (2011), "Incremental training of a detector using online sparse eigen-decomposition", *IEEE Trans. Image Processing* 20: 213–226.

160 2010 H. Li, C. Shen (2010), "Interactive color image segmentation with linear programming", *Machine Vision and Applications* 21: 403–412.

161 C. Shen, J. Kim, H. Wang (2010), "Generalized kernel-based visual tracking", *IEEE Trans. Circuits and Systems for Video Technology* 20: 119–130.

162 C. Shen, J. Kim, L. Wang (2010), "Scalable large-margin Mahalanobis distance metric learning", *IEEE Trans. Neural Networks* 21: 1524–1530.

163 L. Zhou, L. Wang, C. Shen (2010), "Feature selection with redundancy-constrained class separability",

IEEE Trans. Neural Networks 21: 853–858.

164 C. Shen, H. Li (2010), "Boosting through optimization of margin distributions", *IEEE Trans. Neural Networks* 21: 659–666.

165 C. Shen, H. Li (2010), "On the dual formulation of boosting algorithms", *IEEE Trans. Pattern Analysis and Machine Intelligence* 32: 2216–2231.

166 2008 S. Paisitkriangkrai, C. Shen, J. Zhang (2008), "Performance evaluation of local features in human classification and detection", *IET Computer Vision* 2: 236–246.

167 C. Shen, H. Li, M. Brooks (2008), "Supervised dimensionality reduction via sequential semidefinite programming", *Pattern Recognition* 41: 3644–3652.

168 S. Paisitkriangkrai, C. Shen, J. Zhang (2008), "Fast pedestrian detection using a cascade of boosted covariance features", *IEEE Trans. Circuits and Systems for Video Technology* 18: 1140–1151.

169 2007 C. Shen, M. Brooks, A. van den Hengel (2007), "Fast global kernel density mode seeking: applications to localization and tracking", *IEEE Trans. Image Processing* 16: 1457–1469.

170 H. Wang, D. Suter, K. Schindler, C. Shen (2007), "Adaptive object tracking based on an effective appearance filter", *IEEE Trans. Pattern Analysis and Machine Intelligence* 29: 1661–1667.

171 2004 Z. Lin, J. Lu, C. Shen, X. Qiu, B. Xu (2004), "Active control of radiation from a piston set in a rigid sphere", *J. Acoustical Society of America* 115: 2954–2963.

172 2003 J. Lu, C. Shen, X. Qiu, B. Xu (2003), "Lattice form adaptive infinite impulse response filtering algorithm for active noise control", *J. Acoustical Society of America* 113: 327–335.

Refereed top conference articles in computer vision and machine learning (174)

- *Proc. Annual Conf. Neural Information Processing Systems* (*NeurIPS*)
- *Proc. Int. Conf. Machine Learning* (*ICML*)
- *Proc. IEEE Conf. Computer Vision & Pattern Recognition* (*CVPR*)
- *Proc. Int. Conf. Computer Vision* (*ICCV*)
- *Proc. European Conf. Computer Vision* (*ECCV*)
- *Proc. Int. Conf. Learning Representations* (*ICLR*)
- *Proc. ACM SIGKKD Conf. Knowledge Discovery and Data Mining* (*KDD*)

1 2023 Q. Wang, L. Liu, C. Jing, H. Chen, G. Liang, P. Wang, C. Shen (2023), "Learning conditional attributes for compositional zero-shot learning", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'23*).

2 X. Wang, W. Wang, Y. Cao, C. Shen, T. Huang (2023), "Images speak in images: a generalist painter for in-context visual learning", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'23*).

3 G. Xu, W. Yin, H. Chen, C. Shen, K. Cheng, F. Zhao (2023), "Pose-free 3d scene reconstruction with frozen depth models", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'23*).

4 Y. Zhao, Q. Ye, W. Wu, C. Shen, F. Wan (2023), "Generative prompt model for weakly supervised object localization", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'23*).

5 W. Yin, C. Zhang, H. Chen, Z. Cai, G. Yu, K. Wang, X. Chen, C. Shen (2023), "Metric3D: towards zero-shot metric 3d prediction from a single image", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'23*).

6 C. Zhang, W. Yin, G. Yu, Z. Wang, T. Chen, B. Fu, J. Zhou, C. Shen (2023), "Robust geometry-preserving depth estimation using differentiable rendering", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'23*).

7 M. Zhu, H. Li, H. Chen, C. Fan, W. Mao, C. Jing, Y. Liu, C. Shen (2023), "Segprompt: boosting open-world segmentation via category-level prompt learning", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'23*).

8 K. Ying, Q. Zhong, W. Mao, Z. Wang, H. Chen, L. Wu, Y. Liu, C. Fan, Y. Zhuge, C. Shen (2023), "CTVIS: consistent training for online video instance segmentation", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'23*).

9 X. Wang, X. Zhang, Y. Cao, W. Wang, C. Shen, T. Huang (2023), "SegGPT: towards segmenting everything in context", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'23*).

10 W. Wu, Y. Zhao, M. Shou, H. Zhou, C. Shen (2023), "Diffumask: synthesizing images with pixel-level annotations for semantic segmentation using diffusion models", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'23*).

11 W. Wang, Y. Ge, H. Mei, Z. Cai, Q. Sun, C. Shen, Y. Wang, L. Yang, T. Komura (2023), "Zolly: zoom focal length correctly for perspective-distorted human mesh reconstruction", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'23*).

12 X. Chu, Z. Tian, B. Zhang, X. Wang, X. Wei, H. Xia, C. Shen (2023), "Conditional positional encodings for vision transformers", In: *Proc. Int'l Conf. Learning Representations* (*ICLR'23*).

13 G. Pang, C. Shen, H. Jin, A. van den Hengel (2023), "Deep weakly-supervised anomaly detection", In:

Proc. ACM SIGKDD Conf. Knowledge Discovery and Data Mining (*KDD'23*).

14 W. Wu, Y. Zhao, H. Chen, Y. Gu, R. Zhao, Y. He, H. Zhou, M. Shou, C. Shen (2023), "DatasetDM: synthesizing data with perception annotations using diffusion models", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'23*).

15 2022 X. Wang, Z. Yu, S. De Mello, J. Kautz, A. Anandkumar, C. Shen, J. Alvarez (2022), "FreeSOLO: learning to segment objects without annotations", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'22*).

16 A. Long, W. Yin, T. Ajanthan, V. Nguyen, P. Purkait, R. Garg, A. Blair, C. Shen, A. van den Hengel (2022), "Retrieval augmented classification for long-tail visual recognition", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'22*).

17 Y. Dai, B. Price, H. Zhang, C. Shen (2022), "Boosting robustness of image matting with context assembling and strong data augmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'22*).

18 W. Zhang, Z. Huang, G. Yu, T. Chen, G. Luo, X. Wang, W. Liu, C. Shen (2022), "TopFormer: token pyramid transformer for mobile semantic segmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'22*).

19 C. Ding, G. Pan, C. Shen (2022), "Catching both gray and black swans: open-set supervised anomaly detection", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'22*).

20 R. Li, C. Zhang, G. Lin, Z. Wang, C. Shen (2022), "RigidFlow: self-supervised scene flow learning on point clouds by local rigidity prior", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'22*).

21 Y. Gao, J. Zhuang, S. Lin, H. Cheng, X. Sun, K. Li, C. Shen (2022), "DisCo: remedying self-supervised learning on lightweight models with distilled contrastive learning", In: *Proc. European Conf. Computer Vision* (*ECCV'22*).

22 P. Chen, M. Zhang, Y. Shen, K. Sheng, Y. Gao, X. Sun, K. Li, C. Shen (2022), "Efficient decoder-free object detection with transformers", In: *Proc. European Conf. Computer Vision* (*ECCV'22*).

23 T. He, W. Yin, C. Shen, A. van den Hengel (2022), "PointInst3D: segmenting 3D instances by points", In: *Proc. European Conf. Computer Vision* (*ECCV'22*).

24 W. Mao, Y. Ge, C. Shen, Z. Tian, X. Wang, Z. Wang, A. van den Hengel (2022), "Poseur: direct human pose regression with transformers", In: *Proc. European Conf. Computer Vision* (*ECCV'22*).

25 S. Jia, B. Yin, T. Yao, S. Ding, C. Shen, X. Yang, C. Ma (2022), "Adv-attribute: inconspicuous and transferable adversarial attack on face recognition", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'22*).

26 B. Zhang, Z. Tian, Q. Tang, X. Chu, X. Wei, C. Shen, Y. Liu (2022), "SegViT: semantic segmentation with plain vision transformers", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'22*).

27 C. Lin, A. Wu, J. Liang, J. Zhang, W. Ge, W. Zheng, C. Shen (2022), "Text-adaptive multiple visual prototype matching for video-text retrieval", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'22*).

28 Z. Tian, X. Chu, X. Wang, X. Wei, C. Shen (2022), "Fully convolutional one-stage 3D object detection on LiDAR range images", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'22*).

29 C. Zhang, W. Yin, Z. Wang, G. Yu, B. Fu, C. Shen (2022), "Hierarchical normalization for robust monocular depth estimation", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'22*).

30 J. Liang, E. Zhang, J. Zhang, C. Shen (2022), "Multi-dataset training of transformers for robust action recognition", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'22*).

31 Y. Gao, J. Liu, Z. Xu, J. Zhang, K. Li, R. Ji, C. Shen (2022), "PyramidCLIP: hierarchical feature alignment for vision-language model pretraining", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'22*).

32 J. Zhang, C. Chen, B. Li, L. Lyu, S. Wu, S. Ding, C. Shen, C. Wu (2022), "DENSE: data-free one-shot federated learning", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'22*).

33 2021 J. Zhang, Y. Xie, Y. Xia, C. Shen (2021), "DoDNet: learning to segment multi-organ and tumors from multiple partially labeled datasets", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

34 Z. Tian, C. Shen, X. Wang, H. Chen (2021), "BoxInst: high-performance instance segmentation with box annotations", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

35 P. Chen, J. Liu, B. Zhuang, M. Tan, C. Shen (2021), "AQD: towards accurate quantized object detection", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

36 W. Mao, Z. Tian, X. Wang, C. Shen (2021), "FCPose: fully convolutional multi-person pose estimation with dynamic instance-aware convolutions", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

37 Y. Liu, W. Yin, Y. Chen, H. Chen, C. Shen (2021), "Generic perceptual loss for modelling structured

output dependencies", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

38 W. Yin, J. Zhang, O. Wang, S. Niklaus, L. Mai, S. Chen, C. Shen (2021), "Learning to recover 3D scene shape from a single image", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

39 T. He, C. Shen, A. van den Hengel (2021), "DyCo3D: robust instance segmentation of 3d point clouds through dynamic convolution", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

40 Y. Dai, H. Lu, C. Shen (2021), "Learning affinity-aware upsampling for deep image matting", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

41 D. Ruan, Y. Yan, S. Lai, Z. Chai, C. Shen, H. Wang (2021), "Feature decomposition and reconstruction learning for effective facial expression recognition", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

42 Y. Shu, Y. Yan, S. Chen, J. Xue, C. Shen, H. Wang (2021), "Learning spatial-semantic relationship for facial attribute recognition with limited labeled data", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

43 Y. Wang, Z. Xu, X. Wang, C. Shen, B. Cheng, H. Shen, H. Xia (2021), "End-to-end video instance segmentation with Transformers", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

44 R. Li, G. Lin, T. He, F. Liu, C. Shen (2021), "HCRF-Flow: scene flow from point clouds with continuous high-order CRFs and position-aware flow embedding", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

45 X. Wang, R. Zhang, C. Shen, T. Kong, L. Li (2021), "Dense contrastive learning for self-supervised visual pre-training", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

46 D. Guo, Y. Shao, Y. Cui, Z. Wang, L. Zhang, C. Shen (2021), "Graph attention tracking", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'21*).

47 P. Chen, B. Zhuang, C. Shen (2021), "FATNN: fast and accurate ternary neural networks", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'21*).

48 C. Yan, G. Pang, J. Jiao, X. Bai, X. Feng, C. Shen (2021), "Occluded person re-identification with single-scale global representations", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'21*).

49 C. Yan, G. Pang, L. Wang, J. Jiao, X. Feng, C. Shen, J. Li (2021), "BV-Person: a large-scale dataset for bird-view person re-identification", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'21*).

50 J. Yuan, Y. Liu, C. Shen, Z. Wang, H. Li (2021), "A simple baseline for semi-supervised semantic segmentation with strong data augmentation", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'21*).

51 C. Shu, Y. Liu, J. Gao, L. Xu, C. Shen (2021), "Channel-wise knowledge distillation for dense prediction", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'21*).

52 C. Zhang, H. Ding, G. Lin, R. Li, C. Wang, C. Shen (2021), "Meta navigator: search for a good adaptation policy for few-shot learning", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'21*).

53 G. Pang, A. van den Hengel, C. Shen, L. Cao (2021), "Toward deep supervised anomaly detection: reinforcement learning from partially labeled anomaly data", In: *Proc. ACM SIGKDD Conf. Knowledge Discovery and Data Mining* (*KDD'21*).

54 X. Chu, Z. Tian, Y. Wang, B. Zhang, H. Ren, X. Wei, H. Xia, C. Shen (2021), "Twins: revisiting the design of spatial attention in vision transformers", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'21*).

55 B. Zhang, Y. Liu, Z. Tian, C. Shen (2021), "Dynamic neural representational decoders for high-resolution semantic segmentation", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'21*).

56 2020 Y. Qi, Q. Wu, P. Anderson, X. Wang, W. Wang, C. Shen, A. van den Hengel (2020), "REVERIE: remote embodied visual referring expression in real indoor environments", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

57 C. Yu, J. Wang, C. Gao, G. Yu, C. Shen, N. Sang (2020), "Context prior for scene segmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

58 R. Zhang, Z. Tian, C. Shen, M. You, Y. Yan (2020), "Mask encoding for single shot instance segmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

59 X. Wang, Y. Liu, C. Shen, C. Ng, C. Luo, L. Jin, C. Chan, A. van den Hengel, L. Wang (2020), "On the general value of evidence, and bilingual scene-text visual question answering", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

60 B. Zhuang, L. Liu, M. Tan, C. Shen, I. Reid (2020), "Training quantized neural networks with a full-precision auxiliary module", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

61 Y. Liu, H. Chen, C. Shen, T. He, L. Jin, L. Wang (2020), "ABCNet: arbitrarily-shaped scene text spotting with adaptive Bezier-curve network in real time", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

62 H. Chen, K. Sun, Z. Tian, C. Shen, Y. Huang, Y. Yan (2020), "BlendMask: top-down meets bottom-up for instance segmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

63 E. Xie, P. Sun, X. Song, W. Wang, X. Liu, D. Liang, C. Shen, P. Luo (2020), "PolarMask: single shot instance segmentation with polar representation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

64 C. Zhang, Y. Cai, G. Lin, C. Shen (2020), "DeepEMD: few-shot image classification with differentiable earth mover's distance and structured classifiers", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

65 N. Wang, Y. Gao, H. Chen, P. Wang, Z. Tian, C. Shen, Y. Zhang (2020), "NAS-FCOS: fast neural architecture search for object detection", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

66 H. Zhang, Y. Li, H. Chen, C. Shen (2020), "Memory-efficient hierarchical neural architecture search for image denoising", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

67 G. Pang, C. Yan, C. Shen, A. van den Hengel, X. Bai (2020), "Self-trained deep ordinal regression for end-to-end video anomaly detection", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'20*).

68 H. Wang, Q. Wu, C. Shen (2020), "Soft expert reward learning for vision-and-language navigation", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

69 W. Wang, E. Xie, X. Liu, W. Wang, D. Liang, C. Shen, X. Bai (2020), "Scene text image super-resolution in the wild", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

70 W. Wang, X. Liu, X. Ji, E. Xie, D. Liang, Z. Yang, T. Lu, C. Shen, P. Luo (2020), "AE TextSpotter: learning visual and linguistic representation for ambiguous text spotting", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

71 E. Xie, W. Wang, W. Wang, M. Ding, C. Shen, P. Luo (2020), "Segmenting transparent objects in the wild", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

72 Z. Tian, C. Shen, H. Chen (2020), "Conditional convolutions for instance segmentation", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

73 X. Wang, T. Kong, C. Shen, Y. Jiang, L. Li (2020), "SOLO: segmenting objects by locations", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

74 T. He, D. Gong, Z. Tian, C. Shen (2020), "Learning and memorizing representative prototypes for 3D point cloud semantic and instance segmentation", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

75 C. Yu, Y. Liu, C. Gao, C. Shen, N. Sang (2020), "Representative graph neural network", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

76 L. Liu, H. Lu, H. Zou, H. Xiong, Z. Cao, C. Shen (2020), "Weighing counts: sequential crowd counting by reinforcement learning", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

77 Y. Liu, C. Shen, C. Yu, J. Wang (2020), "Efficient semantic video segmentation with per-frame inference", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

78 T. He, Y. Liu, C. Shen, X. Wang, C. Sun (2020), "Instance-aware embedding for point cloud instance segmentation", In: *Proc. European Conf. Computer Vision* (*ECCV'20*).

79 X. Wang, R. Zhang, T. Kong, L. Li, C. Shen (2020), "SOLOv2: dynamic and fast instance segmentation", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'20*).

80 2019 P. Wang, Q. Wu, J. Cao, C. Shen, L. Gao, A. vanden Hengel (2019), "Neighbourhood watch: referring expression comprehension via language-guided graph attention networks", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

81 V. Nekrasov, H. Chen, C. Shen, I. Reid (2019), "Fast neural architecture search of compact semantic segmentation models via auxiliary cells", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

82 H. Li, P. Wang, C. Shen, A. van den Hengel (2019), "Visual question answering as reading comprehension", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

83 B. Zhuang, C. Shen, M. Tan, L. Liu, I. Reid (2019), "Structured binary neural networks for accurate image classification and semantic segmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

84 X. Wang, S. Liu, X. Shen, C. Shen, J. Jia (2019), "Associatively segmenting instances and semantics in point clouds", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

85 C. Zhang, G. Lin, F. Liu, R. Yao, C. Shen (2019), "CANet: class-agnostic segmentation networks with iterative refinement and attentive few-shot learning", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

86 J. Zhang, Q. Wu, J. Zhang, C. Shen, J. Lu (2019), "Mind your neighbours: image annotation with metadata

neighbourhood graph co-attention networks", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

87 Z. Tian, T. He, C. Shen, Y. Yan (2019), "Decoders matter for semantic segmentation: data-dependent decoding enables flexible feature aggregation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

88 T. He, C. Shen, Z. Tian, D. Gong, C. Sun, Y. Yan (2019), "Knowledge adaptation for efficient semantic segmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

89 Q. Yan, D. Gong, Q. Shi, A. van den Hengel, C. Shen, I. Reid, Y. Zhang (2019), "Attention-guided network for ghost-free high dynamic range imaging", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'19*).

90 W. Wang, E. Xie, X. Song, Y. Zang, W. Wang, T. Lu, G. Yu, C. Shen (2019), "Efficient and accurate arbitrary-shaped text detection with pixel aggregation network", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'19*).

91 H. Lu, Y. Dai, C. Shen, S. Xu (2019), "Indices matter: learning to index for deep image matting", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'19*).

92 X. Zhang, J. Cao, C. Shen, M. You (2019), "Self-training with progressive augmentation for unsupervised cross-domain person re-identification", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'19*).

93 W. Yin, Y. Liu, C. Shen, Y. Yan (2019), "Enforcing geometric constraints of virtual normal for depth prediction", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'19*).

94 H. Zhang, C. Shen, Y. Li, Y. Cao, Y. Liu, Y. Yan (2019), "Exploiting temporal consistency for real-time video depth estimation", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'19*).

95 Z. Tian, C. Shen, H. Chen, T. He (2019), "FCOS: fully convolutional one-stage object detection", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'19*).

96 H. Xiong, H. Lu, C. Liu, L. Liu, Z. Cao, C. Shen (2019), "From open set to closed set: counting objects by spatial divide-and-conquer", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'19*).

97 G. Pang, C. Shen, A. van den Hengel (2019), "Deep anomaly detection with deviation networks", In: *Proc. ACM SIGKDD Conf. Knowledge Discovery and Data Mining* (*KDD'19*).

98 J. Bian, Z. Li, N. Wang, H. Zhan, C. Shen, M. Cheng, I. Reid (2019), "Unsupervised scale-consistent depth and ego-motion learning from monocular video", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'19*).

99 J. Cao, L. Mo, Y. Zhang, K. Jia, C. Shen, M. Tan (2019), "Multi-marginal wasserstein GAN", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'19*).

100 2018 T. Shen, G. Lin, C. Shen, I. Reid (2018), "Bootstrapping the performance of webly supervised semantic segmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

101 K. Xian, C. Shen, Z. Cao, H. Lu, Y. Xiao, R. Li, Z. Luo (2018), "Monocular relative depth perception with web stereo data supervision", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

102 Y. Song, C. Ma, X. Wu, L. Gong, L. Bao, W. Zuo, C. Shen, R. Lau, M. Yang (2018), "VITAL: visual tracking via adversarial learning", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

103 T. He, Z. Tian, W. Huang, C. Shen, Y. Qiao, C. Sun (2018), "An end-to-end textspotter with explicit alignment and attention", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

104 Q. Wu, P. Wang, C. Shen, I. Reid, A. van den Hengel (2018), "Are you talking to me? reasoned visual dialog generation through adversarial learning", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

105 B. Zhuang, Q. Wu, C. Shen, I. Reid, A. van den Hengel (2018), "Parallel attention: a unified framework for visual object discovery through dialogs and queries", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

106 B. Zhuang, C. Shen, M. Tan, L. Liu, I. Reid (2018), "Towards effective low-bitwidth convolutional neural networks", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

107 C. Ma, C. Shen, A. Dick, Q. Wu, P. Wang, A. van den Hengel, I. Reid (2018), "Visual question answering with memory-augmented networks", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

108 X. Wang, T. Xiao, Y. Jiang, S. Shao, J. Sun, C. Shen (2018), "Repulsion loss: detecting pedestrians in a crowd", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

109 Y. Chen, Y. Tai, X. Liu, C. Shen, J. Yang (2018), "FSRNet: end-to-end learning face super-resolution with facial priors", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'18*).

110 J. Zhang, Q. Wu, C. Shen, J. Zhang, J. Lu, A. van den Hengel (2018), "Goal-oriented visual question generation via intermediate rewards", In: *Proc. European Conf. Computer Vision* (*ECCV'18*).

111 R. Deng, C. Shen, S. Liu, H. Wang, X. Liu (2018), "Learning to predict crisp boundaries", In: *Proc. European Conf. Computer Vision* (*ECCV'18*).

112 J. Cao, Y. Guo, Q. Wu, C. Shen, J. Huang, M. Tan (2018), "Adversarial learning with local coordinate coding", In: *Proc. Int'l Conf. Machine Learning* (*ICML'18*).

113 2017 P. Wang, Q. Wu, C. Shen, A. van den Hengel (2017), "The VQA-machine: learning how to use existing vision algorithms to answer new questions", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'17*).

114 G. Lin, A. Milan, C. Shen, I. Reid (2017), "RefineNet: multi-path refinement networks for high-resolution semantic segmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'17*).

115 Y. Li, G. Lin, B. Zhuang, L. Liu, C. Shen, A. van den Hengel (2017), "Sequential person recognition in photo albums with a recurrent network", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'17*).

116 D. Gong, J. Yang, L. Liu, Y. Zhang, I. Reid, C. Shen, A. van den Hengel, Q. Shi (2017), "From motion blur to motion flow: a deep learning solution for removing heterogeneous motion blur", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'17*).

117 B. Zhuang, L. Liu, Y. Li, C. Shen, I. Reid (2017), "Attend in groups: a weakly-supervised deep learning framework for learning from web data", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'17*).

118 P. Wang, L. Liu, C. Shen, Z. Huang, A. van den Hengel, H. Shen (2017), "Multi-attention network for one shot learning", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'17*).

119 H. Lu, L. Zhang, Z. Cao, W. Wei, K. Xian, C. Shen, A. van den Hengel (2017), "When unsupervised domain adaptation meets tensor representations", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'17*).

120 B. Zhuang, L. Liu, C. Shen, I. Reid (2017), "Towards context-aware interaction recognition", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'17*).

121 Y. Chen, C. Shen, X. Wei, L. Liu, J. Yang (2017), "Adversarial PoseNet: a structure-aware convolutional network for human pose estimation", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'17*).

122 W. Liu, X. Chen, C. Shen, Z. Liu, J. Yang (2017), "Semi-global weighted least squares in image filtering", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'17*).

123 H. Li, P. Wang, C. Shen (2017), "Towards end-to-end text spotting with convolutional recurrent neural networks", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'17*).

124 2016 Q. Wu, P. Wang, C. Shen, A. Dick, A. van den Hengel (2016), "Ask me anything: free-form visual question answering based on knowledge from external sources", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'16*).

125 Q. Wu, C. Shen, L. Liu, A. Dick, A. van den Hengel (2016), "What value do explicit high level concepts have in vision to language problems", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'16*).

126 P. Wang, L. Liu, C. Shen, Z. Huang, A. van den Hengel, H. Shen (2016), "What's wrong with that object? identifying irregular object from images by modelling the detection score distribution", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'16*).

127 G. Lin, C. Shen, A. van dan Hengel, I. Reid (2016), "Efficient piecewise training of deep structured models for semantic segmentation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'16*).

128 B. Zhuang, G. Lin, C. Shen, I. Reid (2016), "Fast training of triplet-based deep binary embedding networks", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'16*).

129 R. Qiao, L. Liu, C. Shen, A. van den Hengel (2016), "Less is more: zero-shot learning from online textual documents with noise suppression", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'16*).

130 L. Zhang, W. Wei, Y. Zhang, C. Shen, A. van den Hengel, Q. Shi (2016), "Cluster sparsity field for hyperspectral imagery denoising", In: *Proc. European Conf. Computer Vision* (*ECCV'16*).

131 Y. Li, L. Liu, C. Shen, A. van den Hengel (2016), "Image co-localization by mimicking a good detector's confidence score distribution", In: *Proc. European Conf. Computer Vision* (*ECCV'16*).

132 X. Mao, C. Shen, Y. Yang (2016), "Image restoration using very deep fully convolutional encoder-decoder networks with symmetric skip connections", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'16*).

133 2015 Y. Li, L. Liu, C. Shen, A. van den Hengel (2015), "Mid-level deep pattern mining", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'15*).

134 F. Liu, C. Shen, G. Lin (2015), "Deep convolutional neural fields for depth estimation from a single image", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'15*).

135 F. Shen, C. Shen, W. Liu, H. Shen (2015), "Supervised discrete hashing", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'15*).

136 L. Liu, C. Shen, A. van den Hengel (2015), "The treasure beneath convolutional layers: cross convolutional layer pooling for image classification", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'15*).

137 P. Wang, C. Shen, A. van den Hengel (2015), "Efficient SDP inference for fully-connected CRFs based on low-rank decomposition", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'15*).

138 S. Paisitkriangkrai, C. Shen, A. van den Hengel (2015), "Learning to rank in person re-identification with metric ensembles", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'15*).

139 M. Tan, Q. Shi, A. van den Hengel, C. Shen, J. Gao, F. Hu, Z. Zhang (2015), "Learning graph structure for multi-label image classification via clique generation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'15*).

140 B. Li, C. Shen, Y. Dai, A. van den Hengel, M. He (2015), "Depth and surface normal estimation from monocular images using regression on deep features and hierarchical CRFs", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'15*).

141 L. Zhang, W. Wei, Y. Zhang, F. Li, C. Shen, Q. Shi (2015), "Hyperspectral compressive sensing using manifold-structured sparsity prior", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'15*).

142 G. Lin, C. Shen, I. Reid, A. van den Hengel (2015), "Deeply learning the messages in message passing inference", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'15*).

143 2014 G. Lin, C. Shen, Q. Shi, A. van den Hengel, D. Suter (2014), "Fast supervised hashing with decision trees for high-dimensional data", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'14*).

144 G. Lin, C. Shen, J. Wu (2014), "Optimizing ranking measures for compact binary code learning", In: *Proc. European Conf. Computer Vision* (*ECCV'14*).

145 S. Paisitkriangkrai, C. Shen, A. van den Hengel (2014), "Strengthening the effectiveness of pedestrian detection with spatially pooled features", In: *Proc. European Conf. Computer Vision* (*ECCV'14*).

146 L. Liu, C. Shen, L. Wang, A. van den Hengel, C. Wang (2014), "Encoding high dimensional local features by sparse coding based Fisher vectors", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'14*).

147 2013 F. Shen, C. Shen, Q. Shi, A. van den Hengel, Z. Tang (2013), "Inductive hashing on manifolds", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'13*).

148 X. Li, C. Shen, A. Dick, A. van den Hengel (2013), "Learning compact binary codes for visual tracking", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'13*).

149 Z. Wang, Q. Shi, C. Shen, A. van den Hengel (2013), "Bilinear programming for human activity recognition with unknown MRF graphs", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'13*).

150 P. Wang, C. Shen, A. van den Hengel (2013), "A fast semidefinite approach to solving binary quadratic problems", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'13*).

151 R. Yao, Q. Shi, C. Shen, Y. Zhang, A. van den Hengel (2013), "Part-based visual tracking with online latent structural learning", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'13*).

152 G. Lin, C. Shen, D. Suter, A. van den Hengel (2013), "A general two-step approach to learning-based hashing", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'13*).

153 S. Paisitkriangkrai, C. Shen, A. van den Hengel (2013), "Efficient pedestrian detection by directly optimizing the partial area under the ROC curve", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'13*).

154 X. Li, Y. Li, C. Shen, A. Dick, A. van den Hengel (2013), "Contextual hypergraph modeling for salient object detection", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'13*).

155 M. Harandi, C. Sanderson, C. Shen, B. Lovell (2013), "Dictionary learning and sparse coding on Grassmann manifolds: an extrinsic solution", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'13*).

156 X. Li, G. Lin, C. Shen, A. van den Hengel, A. Dick (2013), "Learning hash functions using column generation", In: *Proc. Int'l Conf. Machine Learning* (*ICML'13*).

157 2012 X. Li, C. Shen, Q. Shi, A. Dick, A. van den Hengel (2012), "Non-sparse linear representations for visual tracking with online reservoir metric learning", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'12*): 1760–1767.

158 S. Paisitkriangkrai, C. Shen, A. van den Hengel (2012), "Sharing features in multi-class boosting via group sparsity", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'12*): 2128–2135.

159 R. Yao, Q. Shi, C. Shen, Y. Zhang, A. van den Hengel (2012), "Robust tracking with weighted online structured learning", In: *Proc. European Conf. Computer Vision* (*ECCV'12*): 158–172.

160 Q. Shi, C. Shen, R. Hill, A. van den Hengel (2012), "Is margin preserved after random projection?", In: *Proc. Int'l Conf. Machine Learning* (*ICML'12*).

161 2011 C. Shen, Z. Hao (2011), "A direct formulation for totally-corrective multi-class boosting", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'11*): 2585–2592.

162 L. Liu, L. Wang, C. Shen (2011), "A generalized probabilistic framework for compact codebook creation", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'11*): 1537–1544.

163 Q. Shi, A. Eriksson, A. van den Hengel, C. Shen (2011), "Is face recognition really a compressive sensing problem?", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'11*): 553–560.

164 H. Li, C. Shen, Q. Shi (2011), "Real-time visual tracking using compressive sensing", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'11*): 1305–1312.

165 C. Shen, J. Kim, L. Wang (2011), "A scalable dual approach to semidefinite metric learning", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'11*): 2601–2608.

166 X. Li, A. Dick, H. Wang, C. Shen, A. van den Hengel (2011), "Graph mode-based contextual kernels for robust SVM tracking", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'11*): 1156–1163.

167 2010 Q. Shi, H. Li, C. Shen (2010), "Rapid face recognition using hashing", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'10*): 2753–2760.

168 C. Shen, P. Wang, H. Li (2010), "LACBoost and FisherBoost: optimally building cascade classifiers", In: *Proc. European Conf. Computer Vision* (*ECCV'10*): 608–621.

169 2009 S. Paisitkriangkrai, C. Shen, J. Zhang (2009), "Efficiently training a better visual detector with sparse eigenvectors", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'09*): 1129–1136.

170 C. Shen, J. Kim, L. Wang, A. van den Hengel (2009), "Positive semidefinite metric learning with boosting", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'09*).

171 2008 L. Wang, L. Zhou, C. Shen (2008), "A fast algorithm for creating a compact and discriminative visual codebook", In: *Proc. European Conf. Computer Vision* (*ECCV'08*): 719–732.

172 C. Shen, A. Welsh, L. Wang (2008), "PSDBoost: matrix-generation linear programming for positive semidefinite matrices learning", In: *Proc. Advances in Neural Information Processing Systems* (*NeurIPS'08*).

173 2007 Q. Nguyen, A. Robles-Kelly, C. Shen (2007), "Kernel-based tracking from a probabilistic viewpoint", In: *Proc. IEEE Conf. Computer Vision and Pattern Recognition* (*CVPR'07*).

174 2005 C. Shen, M. Brooks, A. van den Hengel (2005), "Fast global kernel density mode seeking with application to localisation and tracking", In: *Proc. IEEE Int'l Conf. Computer Vision* (*ICCV'05*): 1516–1523.

Refereed major conference articles in artificial intelligence and robotics (31)

- *Proc. AAAI Conf. Artificial Intelligence* (*AAAI*)
- *Proc. Int. Joint Conf. Artificial Intelligence* (*IJCAI*)
- *Proc. IEEE Int. Conf. Robotics & Automation* (*ICRA*)
- *Proc. British Machine Vision Conf.* (*BMVC*)
- *Proc. ACM Int. Conf. Multimedia* (*ACM MM*)
- *Proc. Int. Conf. Medical Image Computing and Computer Assisted Intervention* (*MICCAI*)

1 2023 Y. Qin, X. Chen, C. Chen, Y. Shen, B. Ren, Y. Gu, J. Yang, C. Shen (2023), "FoPro: few-shot guided robust webly-supervised prototypical learning", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'23*).

2 Y. Ge, Q. Zhou, X. Wang, Z. Wang, H. Li, C. Shen (2023), "Point-Teaching: weakly semi-supervised object detection with point annotations", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'23*).

3 2022 D. Peng, X. Wang, Y. Liu, J. Zhang, M. Huang, S. Lai, S. Zhu, J. Li, D. Lin, C. Shen, X. Bai, L. Jin (2022), "SPTS: single-point text spotting", In: *Proc. ACM Int'l Conf. Multimedia* (*ACMMM'22*).

4 2021 X. Zhang, X. Wang, J. Bian, C. Shen, M. You (2021), "Diverse knowledge distillation for end-to-end person search", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'21*).

5 C. Liu, P. Chen, B. Zhuang, C. Shen, B. Zhang, W. Ding (2021), "SA-BNN: state-aware binary neural network", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'21*).

6 H. Wang, P. Chen, B. Zhuang, C. Shen (2021), "Fully quantized image super-resolution networks", In: *Proc. ACM Int'l Conf. Multimedia* (*ACMMM'21*).

7 Y. Zhuge, C. Shen (2021), "Deep reasoning network for few-shot semantic segmentation", In: *Proc. ACM Int'l Conf. Multimedia* (*ACMMM'21*).

8 L. Kong, C. Shen, J. Yang (2021), "FastFlowNet: a lightweight network for fast optical flow estimation", In: *Proc. Int'l Conf. Robotics and Automation* (*ICRA'21*).

9 Y. Xie, J. Zhang, C. Shen, Y. Xia (2021), "CoTr: efficient 3D medical image segmentation by bridging CNN and transformer", In: *Proc. Int'l Conf. Medical Image Computing and Computer Assisted Intervention* (*MICCAI'21*).

10 2020 D. Teney, P. Wang, J. Cao, L. Liu, C. Shen, A. van den Hengel (2020), "V-PROM: a benchmark for visual

reasoning using visual progressive matrices", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'20*).

11 X. Wang, W. Yin, T. Kong, Y. Jiang, L. Li, C. Shen (2020), "Task-aware monocular depth estimation for 3D object detection", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'20*).

12 H. Wang, G. Pang, C. Shen, C. Ma (2020), "Unsupervised representation learning by predicting random distances", In: *Proc. Int'l Joint Conferences on Artificial Intelligence* (*IJCAI'20*).

13 Y. Xie, J. Zhang, Z. Liao, C. Shen, J. Verjans, Y. Xia (2020), "Pairwise relation learning for semi-supervised gland segmentation", In: *Proc. Int'l Conf. Medical Image Computing and Computer Assisted Intervention* (*MICCAI'20*).

14 2019 H. Li, P. Wang, C. Shen, G. Zhang (2019), "Show, attend and read: a simple and strong baseline for irregular text recognition", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'19*).

15 C. Yan, G. Pang, X. Bai, C. Shen, J. Zhou, E. Hancock (2019), "Deep hashing by discriminating hard examples", In: *Proc. ACM Int'l Conf. Multimedia* (*ACMMM'19*).

16 V. Nekrasov, T. Dharmasiri, A. Spek, T. Drummond, C. Shen, I. Reid (2019), "Real-time joint semantic segmentation and depth estimation using asymmetric annotations", In: *Proc. Int'l Conf. Robotics and Automation* (*ICRA'19*).

17 J. Zhang, Y. Xie, P. Zhang, H. Chen, Y. Xia, C. Shen (2019), "Light-weight hybrid convolutional network for liver tumor segmentation", In: *Proc. Int'l Joint Conf. Artificial Intelligence* (*IJCAI'19*).

18 Y. Xie, H. Lu, J. Zhang, C. Shen, Y. Xia (2019), "Deep segmentation-emendation model for gland instance segmentation", In: *Proc. Int'l Conf. Medical Image Computing and Computer Assisted Intervention* (*MICCAI'19*).

19 2018 J. Zhang, Q. Wu, J. Zhang, C. Shen, J. Lu (2018), "Kill two birds with one stone: weakly-supervised neural network for image annotation and tag refinement", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'18*).

20 B. Zhuang, Q. Wu, C. Shen, I. Reid, A. van den Hengel (2018), "HCVRD: a benchmark for large-scale human-centered visual relationship detection", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'18*).

21 V. Nekrasov, C. Shen, I. Reid (2018), "Light-weight refinenet for real-time semantic segmentation", In: *Proc. British Machine Vision Conference* (*BMVC'18*).

22 M. Cai, C. Shen, I. Reid (2018), "A hybrid probabilistic model for camera relocalization", In: *Proc. British Machine Vision Conference* (*BMVC'18*).

23 P. Zhang, W. Liu, H. Lu, C. Shen (2018), "Salient object detection by lossless feature reflection", In: *Proc. Int'l Joint Conf. Artificial Intelligence* (*IJCAI'18*).

24 2017 R. Qiao, L. Liu, C. Shen, A. van den Hengel (2017), "Visually aligned word embeddings for improving zero-shot learning", In: *Proc. British Machine Vision Conference* (*BMVC'17*).

25 T. Shen, G. Lin, L. Liu, C. Shen, I. Reid (2017), "Weakly supervised semantic segmentation based on co-segmentation", In: *Proc. British Machine Vision Conference* (*BMVC'17*).

26 Z. Chen, A. Jacobson, N. Sunderhauf, B. Upcroft, L. Liu, C. Shen, I. Reid, M. Milford (2017), "Deep learning features at scale for visual place recognition", In: *Proc. IEEE Int'l Conf. Robotics and Automation* (*ICRA'17*).

27 T. Shen, G. Lin, C. Shen, I. Reid (2017), "Learning multi-level region consistency with dense multi-label networks for semantic segmentation", In: *Proc. Int'l Joint Conf. Artificial Intelligence* (*IJCAI'17*).

28 X. Wei, C. Zhang, Y. Li, C. Xie, J. Wu, C. Shen, Z. Zhou (2017), "Deep descriptor transforming for image co-localization", In: *Proc. Int'l Joint Conf. Artificial Intelligence* (*IJCAI'17*).

29 P. Wang, Q. Wu, C. Shen, A. van den Hengel, A. Dick (2017), "Explicit knowledge-based reasoning for visual question answering", In: *Proc. Int'l Joint Conf. Artificial Intelligence* (*IJCAI'17*).

30 2011 K. Park, C. Shen, Z. Hao, J. Kim (2011), "Efficiently learning a distance metric for large margin nearest neighbor classification", In: *Proc. AAAI Conf. Artificial Intelligence* (*AAAI'11*): 453–458.

31 2010 L. Zhou, L. Wang, C. Shen, N. Barnes (2010), "Hippocampal shape classification using redundancy constrained feature selection", In: *Proc. Int'l Conf. Medical Image Computing and Computer Assisted Intervention* (*MICCAI'10*): 266–273.

Refereed other miscellaneous conference articles (42)

1 2018 R. Li, K. Xian, C. Shen, Z. Cao, H. Lu, L. Hang (2018), "Deep attention-based classification network for robust depth prediction", In: *Proc. Asian Conf. Computer Vision* (*ACCV'18*).

2 X. Wei, C. Zhang, L. Liu, C. Shen, J. Wu (2018), "Coarse-to-fine: a RNN-based hierarchical attention model for vehicle re-identification", In: *Proc. Asian Conf. Computer Vision* (*ACCV'18*).

3 L. Dong, Y. Gan, X. Mao, Y. Yang, C. Shen (2018), "Learning deep representations using convolutional auto-encoders with symmetric skip connections", In: *Proc. IEEE Int'l Conf. Acoustics, Speech and Signal*

Processing (*ICASSP'18*).

4 2017 S. McMahon, T. Shen, N. Sunderhauf, I. Reid, C. Shen, M. Milford (2017), "Auxiliary tasks to improve trip hazard affordance detection", In: *Proc. Australasian Conf. Robotics and Automation* (*ACRA'17*).

5 2015 M. Milford, C. Shen, S. Lowry, N. Suenderhauf, S. Shirazi, G. Lin, F. Liu, E. Pepperell, C. Lerma, B. Upcroft, I. Reid (2015), "Sequence searching with deep-learnt depth for condition- and viewpoint-invariant route-based place recognition", In: *Proc. 6th Int'l Workshop on Computer Vision in Vehicle Technology, in conjunction with IEEE Conf. Computer Vision and Pattern Recognition* (*CVVT'15*).

6 2013 G. Lin, C. Shen, A. van den Hengel (2013), "Approximate constraint generation for efficient structured boosting", In: *Proc. IEEE Conf. Image Processing* (*ICIP'13*).

7 Y. Li, C. Shen, W. Jia, A. van den Hengel (2013), "Leveraging surrounding context for scene text detection", In: *Proc. IEEE Conf. Image Processing* (*ICIP'13*).

8 C. Zhang, J. Bastian, C. Shen, A. van den Hengel, T. Shen (2013), "Extended depth-of-field via focus stacking and graph cuts", In: *Proc. IEEE Conf. Image Processing* (*ICIP'13*).

9 2012 G. Lin, C. Shen, A. van den Hengel, D. Suter (2012), "Fast training of effective multi-class boosting using coordinate descent optimization", In: *Proc. Asian Conf. Computer Vision* (*ACCV'12*): 782–795.

10 2011 L. Wang, C. Shen, R. Hartley (2011), "On the optimality of sequential forward feature selection using class separability measure", In: *Proc. Int'l Conf. Digital Image Computing: Techniques and Applications* (*DICTA'11*): 203–208.

11 T. Wang, X. He, C. Shen, N. Barnes (2011), "Laplacian margin distribution boosting for learning from sparsely labeled data", In: *Proc. Int'l Conf. Digital Image Computing: Techniques and Applications* (*DICTA'11*): 209–216.

12 2010 P. Wang, C. Shen, N. Barnes, H. Zheng, Z. Ren (2010), "Asymmetric totally-corrective boosting for real-time object detection", In: *Proc. Asian Conf. Computer Vision* (*ACCV'10*): 176–188.

13 Y. Zheng, C. Shen, R. Hartley, X. Huang (2010), "Pyramid center-symmetric local binary, trinary patterns for effective pedestrian detection", In: *Proc. Asian Conf. Computer Vision* (*ACCV'10*): 281–292.

14 Z. Hao, C. Shen, N. Barnes, B. Wang (2010), "Totally-corrective multi-class boosting", In: *Proc. Asian Conf. Computer Vision* (*ACCV'10*): 269–280.

15 S. Paisitkriangkrai, C. Shen, J. Zhang (2010), "Face detection with effective feature extraction", In: *Proc. Asian Conf. Computer Vision* (*ACCV'10*): 460–470.

16 H. Li, P. Wang, C. Shen (2010), "Robust face recognition via accurate face alignment and sparse representation", In: *Proc. Int'l Conf. on Digital Image Computing: Techniques and Applications* (*DICTA'10*): 262–269.

17 W. Wang, J. Zhang, C. Shen (2010), "Improved human detection and classification in thermal images", In: *Proc. IEEE Int'l Conf. Image Processing* (*ICIP'10*): 2313–2316.

18 P. Wang, C. Shen, H. Zheng, Z. Ren (2010), "Training a multi-exit cascade with linear asymmetric classification for efficient object detection", In: *Proc. IEEE Int'l Conf. Image Processing* (*ICIP'10*): 61–64.

19 2009 P. Wang, C. Shen, H. Zheng, Z. Ren (2009), "A variant of the trace quotient formulation for dimensionality reduction", In: *Proc. 9th Asian Conf. Computer Vision* (*ACCV'09*): 277–286.

20 J. Kim, C. Shen, L. Wang (2009), "A scalable algorithm for learning a Mahalanobis distance metric", In: *Proc. 9th Asian Conf. Computer Vision* (*ACCV'09*): 299–310.

21 Y. Dai, H. Li, M. He, C. Shen (2009), "Smooth approximation of l_∞-norm for multi-view geometry", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'09*): 339–346.

22 W. Wang, C. Shen, J. Zhang, S. Paisitkriangkrai (2009), "A two-layer night-time vehicle detector", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'09*): 162–167.

23 2008 Y. Lu, L. Wang, R. Hartley, H. Li, C. Shen (2008), "Multi-view human motion capture with an improved deformation skin model", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'08*): 420–427.

24 J. Kim, C. Shen, L. Wang (2008), "Learning cascaded reduced-set SVMs using linear programming", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'08*): 619–626.

25 H. Li, C. Shen (2008), "Boosting the minimum margin: LPBoost vs. AdaBoost", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'08*): 533–539.

26 C. Shen, H. Li, M. Brooks (2008), "Self-calibrating cameras using semidefinite programming", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'08*): 436–441.

27 C. Shen, S. Paisitkriangkrai, J. Zhang (2008), "Face detection from few training examples", In: *Proc. IEEE Int'l Conf. Image Processing* (*ICIP'08*): 2764–2767.

28 S. Paisitkriangkrai, C. Shen, J. Zhang (2008), "Real-time pedestrian detection using a boosted multi-layer classifier", In: *Proc. 8th IEEE Int'l Workshop on Visual Surveillance, in conjunction with European Conf. Computer Vision* (*ECCVW'08*).

29 2007 C. Shen, H. Li, M. Brooks (2007), "A convex programming approach to the trace quotient problem", In: *Proc. 8th Asian Conf. Computer Vision* (*ACCV'07*): 227–235.

30 H. Li, C. Shen, Z. Wen (2007), "Color image labelling using linear programming", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'07*): 239–244.

31 S. Paisitkriangkrai, C. Shen, J. Zhang (2007), "An experimental evaluation of local features for pedestrian classification", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'07*): 53–60.

32 C. Shen, H. Li, M. Brooks (2007), "Feature extraction using sequential semidefinite programming", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'07*): 430–437.

33 H. Li, C. Shen (2007), "Object-respecting colour image segmentation: an LP approach", In: *Proc. IEEE Int'l Conf. Image Processing* (*ICIP'07*): 257–260.

34 2006 C. Shen, H. Li, M. Brooks (2006), "Classification-based likelihood functions for Bayesian tracking", In: *Proc. IEEE Int'l Conf. Advanced Video and Signal based Surveillance* (*AVSS'06*): 33–38.

35 H. Li, C. Shen (2006), "An LMI approach for reliable PTZ camera self-calibration", In: *Proc. IEEE Int'l Conf. Advanced Video and Signal based Surveillance* (*AVSS'06*): 79–84.

36 Q. Nguyen, A. Robles-Kelly, C. Shen (2006), "Enhanced kernel-based tracking for monochromatic and thermographic video", In: *Proc. IEEE Int'l Conf. Advanced Video and Signal based Surveillance* (*AVSS'06*): 28–33.

37 2005 C. Shen, A. van den Hengel, M. Brooks (2005), "Visual tracking via efficient kernel discriminant subspace learning", In: *Proc. IEEE Int'l Conf. Image Processing* (*ICIP'05*): 590–593.

38 C. Shen, M. Brooks, A. van den Hengel (2005), "Augmented particle filtering for efficient visual tracking", In: *Proc. IEEE Int'l Conf. Image Processing* (*ICIP'05*): 856–859.

39 C. Shen, M. Brooks (2005), "Adaptive over-relaxed mean shift", In: *Proc. 8th Int'l Symposium on Signal Processing and Its Applications* (*ISSPA'05*): 575–578.

40 2004 C. Shen, A. van den Hengel, A. Dick, M. Brooks (2004), "Enhanced importance sampling: unscented auxiliary particle filtering for visual tracking", In: *Proc. Australian Joint Conf. Artificial Intelligence* (*AI'04*): 180–191.

41 C. Shen, A. van den Hengel, A. Dick, M. Brooks (2004), "2D articulated tracking with dynamic Bayesian networks", In: *Proc. Int'l Conf. Computer and Information Technology* (*CIT'04*): 130–136.

42 2003 C. Shen, A. van den Hengel, A. Dick (2003), "Probabilistic multiple cue integration for particle filter based tracking", In: *Proc. Int'l Conf. Digital Image Computing - Techniques and Applications* (*DICTA'03*): 309–408.

Google scholar citation (*h-index*: 116; *citations*: 62550)

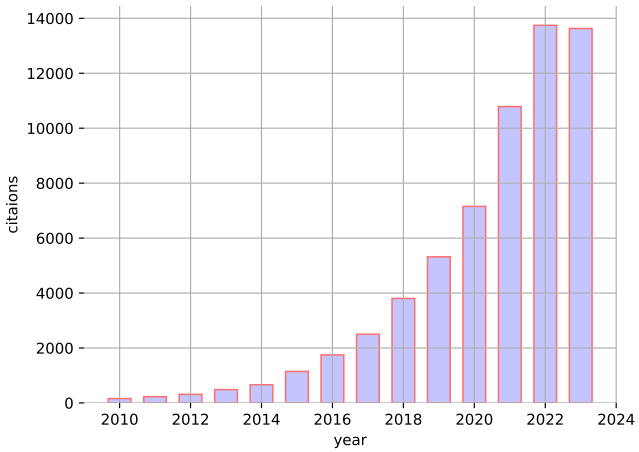

Figure 1: Google scholar citation as of 14·11·2023