2020 IEEE Winter Applications of Computer Vision Workshops (WACVW 2020)

Snowmass Village, Colorado, USA 1-5 March 2020



IEEE Catalog Number: CFP20B39-POD ISBN:

978-1-7281-7163-0

Copyright © 2020 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP20B39-POD

 ISBN (Print-On-Demand):
 978-1-7281-7163-0

 ISBN (Online):
 978-1-7281-7162-3

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633

E-mail: curran@proceedings.com Web: www.proceedings.com



Table of Contents

Re-Identification of Zebratish using Metric Learning (Joakim Bruslund Haurum, Anastasija Karnova, Malto Poderson, Stafon Hein Bongtoon, Thomas P. Moselund)	1
Karpova, Malte Pedersen, Stefan Hein Bengtson, Thomas B. Moeslund)	ı
Learning Landmark Guided Embeddings for Animal Re-identification (Olga Moskvyak, Frederic Maire, Feras Dayoub, Mahsa Baktashmotlagh)	12
CAFM: A 3D Morphable Model for Animals (Yifan Sun, Noboru Murata)	20
Siamese Network Based Pelage Pattern Matching for Ringed Seal	_0
Re-identification (Ekaterina Nepovinnykh, Tuomas Eerola, Heikki Kalviainen)	25
Bumblebee Re-Identification Dataset (Frederic Tausch, Simon Stock, Julian Fricke, Olaf Klein)	35
Fusing Animal Biometrics with Autonomous Robotics: Drone-based Search and Individual ID of Friesian Cattle (Extended Abstract) (William Andrew, Colin Greatwood, Tilo Burghardt)	38
Similarity Learning Networks for Animal Individual Re-Identification - Beyond the Capabilities of a Human Observer (Stefan Schneider, Graham W. Taylor, Stefan C. Kremer)	44
Disrupting Image-Translation-Based DeepFake Algorithms with Adversarial Attacks (Chin-Yuan Yeh, Hsi-Wen Chen, Shang-Lun Tsai, Sheng-De Wang)	53
Syn2Real: Forgery Classification via Unsupervised Domain Adaptation (Akash Kumar, Arnav Bhavsar, Rajesh Verma)	63
IMD2020: A Large-Scale Annotated Dataset Tailored for Detecting Manipulated Images (Adam Novozámský, Babak Mahdian, Stanislav Saic)	71
Analysis of Gender Inequality In Face Recognition Accuracy (Vítor Albiero, Krishnapriya K.S., Kushal Vangara, Kai Zhang, Michael C. King, Kevin W. Bowyer)	81
Mitigating Algorithmic Bias: Evolving an Augmentation Policy that is Non-Biasing (Philip Smith, Karl Ricanek)	90
Reducing Geographic Performance Differentials for Face Recognition (Martins Bruveris, Jochem Gietema, Pouria Mortazavian, Mohan Mahadevan)	98
Activity Detection in Untrimmed Videos Using Chunk-based Classifiers (Joshua Gleason, Steven Schwarcz, Rajeev Ranjan, Carlos D. Castillo, Jun-Cheng Chen, Rama Chellappa)	107
Real-time Detection of Activities in Untrimmed Videos (Joshua Gleason, Carlos D. Castillo, Rama Chellappa)	117
Argus: Efficient Activity Detection System for Extended Video Analysis (Wenhe Liu, Guoliang Kang, Po-Yao Huang, Xiaojun Chang, Lijun Yu, Yijun Qian, Junwei Liang, Liangke Gui, Jing	
Wen, Peng Chen)	126
Context Sensitivity of Spatio-Temporal Activity Detection using Hierarchical Deep Neural	
Networks in Extended Videos (Felix Hertlein, David Münch, Michael Arens)	134
Adaptive Feature Aggregation for Video Object Detection (Yijun Qian, Lijun Yu, Wenhe Liu, Guoliang Kang, Alexander G. Hauptmann)	143
Summary of the 2019 Activity Detection in Extended Videos Prize Challenge	
(Yooyoung Lee, Jon Fiscus, Afzal Godil, Andrew Delgado, Jim Golden, Lukas Diduch, Maxime Hubert)	148

Boosted Kernelized Correlation Filters for Event-based Face Detection (Bharath Ramesh, Hong Yang)	155
Real-Time Activity Detection of Human Movement in Videos via Smartphone Based on Synthetic Training Data (Rico Thomanek, Tony Rolletschke, Benny Platte, Claudia Hösel, Christian Roschke, Robert Manthey, Manuel Heinzig, Richard Vogel, Frank Zimmer, Matthias Vodel, Maximilian Eibl, Marc Ritter)	160
Exploring Techniques to Improve Activity Recognition using Human Pose Skeletons (Bharath Raj N., Anand Subramanian, Kashyap Ravichandran, Dr. N. Venkateswaran)	165
Impact of ImageNet Model Selection on Domain Adaptation (Youshan Zhang, Brian D. Davison)	173
Memory-Efficient Models for Scene Text Recognition via Neural Architecture Search (SeulGi Hong, DongHyun Kim, Min-Kook Choi)	183
The Sloop System for Individual Animal Identification with Deep Learning (Kshitij Bakliwal, Sai Ravela)	N/A