

# **EG 3DOR 2019**

## **Eurographics Workshop on 3D Object Retrieval**

**Genoa, Italy  
May 5-6, 2019**

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## Table of Contents

Table of Contents .....	iii
Preface .....	v
Co-Organizers .....	vi
International Programme Committee .....	vii
Author Index .....	viii
Keynote .....	x
<b>Paper Session 1</b>	
POP: Full Parametric model Estimation for Occluded People .....	1
<i>Riccardo Marin, Simone Melzi, Niloy J. Mitra, and Umberto Castellani</i>	
mpLBP: An Extension of the Local Binary Pattern to Surfaces based on an Efficient Coding of the Point Neighbours .....	9
<i>Elia Moscoso Thompson, Silvia Biasotti, Julie Digne, and Raphaelle Chaine</i>	
Sketch-Aided Retrieval of Incomplete 3D Cultural Heritage Objects .....	17
<i>Stefan Lengauer, Alexander Komar, Arniel Labrada, Stephan Karl, Elisabeth Trinkl, Reinhold Preiner, Benjamin Bustos, and Tobias Schreck</i>	
<b>SHREC Session 1</b>	
Protein Shape Retrieval Contest .....	25
<i>Florent Langenfeld, Apostolos Axenopoulos, Halim Benhabiles, Petros Daras, Andrea Giachetti, Xusi Han, Karim Hammoudi, Daisuke Kihara, Tuan M. Lai, Haiguang Liu, Mahmoud Melkemi, Stelios K. Mylonas, Genki Terashi, Yufan Wang, Feryal Windal, and Matthieu Montes</i>	
Extended 2D Scene Sketch-Based 3D Scene Retrieval .....	33
<i>Juefei Yuan, Hameed Abdul-Rashid, Bo Li, Yijuan Lu, Tobias Schreck, Ngoc-Minh Bui, Trong-Le Do, Khac-Tuan Nguyen, Thanh-An Nguyen, Vinh-Tiep Nguyen, Minh-Triet Tran, and Tianyang Wang</i>	
Extended 2D Scene Image-Based 3D Scene Retrieval .....	41
<i>Hameed Abdul-Rashid, Juefei Yuan, Bo Li, Yijuan Lu, Tobias Schreck, Ngoc-Minh Bui, Trong-Le Do, Mike Holenderski, Dmitri Jarnikov, Khiem T. Le, Vlado Menkovski, Khac-Tuan Nguyen, Thanh-An Nguyen, Vinh-Tiep Nguyen, Tu V. Ninh, Perez Rey, Minh-Triet Tran, and Tianyang Wang</i>	
Classification in Cryo-Electron Tomograms .....	49
<i>Ilja Gubins, Gijs van der Schot, Remco C. Veltkamp, Friedrich Förster, Xuefeng Du, Xiangrui Zeng, Zhenxi Zhu, Lufan Chang, Min Xu, Emmanuel Moebel, Antonio Martinez-Sanchez, Charles Kervrann, Tuan M. Lai, Xusi Han, Genki Terashi, Daisuke Kihara, Benjamin A. Himes, Xiaohua Wan, Jingrong Zhang, Shan Gao, Yu Hao, Zhilong Lv, Zhidong Yang, Zijun Ding, Xuefeng Cui, and Fa Zhang</i>	

## Table of Contents

### Paper Session 2

Depth-Based Face Recognition by Learning from 3D-LBP Images .....	55
<i>Joao Baptista Cardia Neto, Aparecido Nilceu Marana, Claudio Ferrari, Stefano Berretti, and Alberto Del Bimbo</i>	
CMH: Coordinates Manifold Harmonics for Functional Remeshing .....	63
<i>Riccardo Marin, Simone Melzi, Pietro Musoni, Filippo Bardon, Marco Tarini, and Umberto Castellani</i>	
Generalizing Discrete Convolutions for Unstructured Point Clouds .....	71
<i>Alexandre Boulch</i>	
A 3D CAD Assembly Benchmark .....	79
<i>Katia Lupinetti, Franca Giannini, Marina Monti, and Jean-Philippe Pernot</i>	

### SHREC Session 2

Feature Curve Extraction on Triangle Meshes .....	85
<i>E. Moscoso Thompson, G. Arvanitis, K. Moustakas, N. Hoang-Xuan, E. R. Nguyen, M. Tran, T. Lejemble, L. Barthe, N. Mellado, C. Romanengo, S. Biasotti, and B. Falcidieno</i>	
Online Gesture Recognition .....	93
<i>F. M. Caputo, S. Burato, G. Pavan, T. Voillemin, H. Wannous, J. P. Vandeborre, M. Maghoumi, E. M. Taranta II, A. Razmjoo, J. J. LaViola Jr., F. Manganaro, S. Pini, G. Borghi, R. Vezzani, R. Cucchiara, H. Nguyen, M. T. Tran, and A. Giachetti</i>	
Monocular Image Based 3D Model Retrieval .....	103
<i>Wenhui Li, Anan Liu, Weizhi Nie, Dan Song, Yuqian Li, Weijie Wang, Shu Xiang, Heyu Zhou, Ngoc-Minh Bui, Yunchi Cen, Zenian Chen, Huy-Hoang Chung-Nguyen, Gia-Han Diep, Trong-Le Do, Eugeni L. Doubrovski, Anh-Duc Duong, Jo M. P. Geraedts, Haobin Guo, Trung-Hieu Hoang, Yichen Li, Xing Liu, Zishun Liu, Duc-Tuan Luu, Yunsheng Ma, Vinh-Tiep Nguyen, Jie Nie, Tongwei Ren, Mai-Khiem Tran, Son-Thanh Tran-Nguyen, Minh-Triet Tran, The-Anh Vu-Le, Charlie C. L. Wang, Shijie Wang, Gangshan Wu, Caifei Yang, Meng Yuan, Hao Zhai, Ao Zhang, Fan Zhang, and Sicheng Zhao</i>	
Shape Correspondence with Isometric and Non-Isometric Deformations .....	111
<i>R. M. Dyke, C. Stride, Y.-K. Lai, P. L. Rosin, M. Aubry, A. Boyarski, A. M. Bronstein, M. M. Bronstein, D. Cremers, M. Fisher, T. Groueix, D. Guo, V. G. Kim, R. Kimmel, Z. Löhner, K. Li, O. Litany, T. Remez, E. Rodolà, B. C. Russell, Y. Sahillioglu, R. Slossberg, G. K. L. Tam, M. Vestner, Z. Wu, and J. Yang</i>	
Matching Humans with Different Connectivity .....	121
<i>S. Melzi, R. Marin, E. Rodolà, U. Castellani, J. Ren, A. Poulenard, P. Wonka, and M. Ovsjanikov</i>	

## Preface

The aim of the 3DOR Workshop series is to stimulate researchers from different fields such as Computer Vision, Computer Graphics, Machine Learning, Cognitive Science and Human-Computer Interaction who are interested in 3D object retrieval, recognition and exploration, to present state-of-the-art work in the field or learn about it and participate in discussions. It provides a cross-fertilization that stimulates a broader forum of discussions on the next steps in this important research area.

3DOR 2019 is the 12th workshop in 3DOR series which is held on May 5-6, 2019 in Genoa, Italy in conjunction with Eurographics 2019, the 40th Annual Conference of the European Association for Computer Graphics (EG2019). It is organized and hosted by the Genoa branch of the Institute of Applied Mathematics and Information Technologies of the National Research Council (IMATI - CNR), Italy in cooperation with Eurographics (EG). We are pleased to welcome Mirela Ben-Chen (Center for Graphics and Geometric Computing, CS, Technion - Israel Institute of Technology) as invited keynote speaker. The workshop hosts two technical paper sessions, the 3D Shape Retrieval Contest (SHREC 2019) which contained 9 tracks, a session with the presentation of four European projects, and a panel discussion session. For the technical papers, we received 10 submissions, out of which 6 were accepted as long papers and 1 as short paper. All papers were evaluated in a blind process by at least three reviewers from our international program committee, consisting of 32 experts in the area. The papers comprise innovative results in many aspects of 3D Object Retrieval, including sketch-based 3DOR, model estimation for occluded objects, remeshing for 3DOR, robust 3D feature extraction, facial analysis for 3DOR, deep learning architectures and benchmarking for 3DOR. As in past editions, a special issue in the Computer & Graphics journal is planned based on extended versions of selected full papers. We would like to thank the IPC members for their efforts in reviewing, which helped us to create a high-quality and exciting program. We also thank the Eurographics Association for their continued support of this event, IMATI-CNR for its hosting, sponsorship and technical support, and of course Stefanie Behnke for her excellent support in managing the production of the workshop proceedings.

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## Author Index

- Abdul-Rashid, Hameed ..... 33, 41  
Arvanitis, G. .... 85  
Aubry, M. .... 111  
Axenopoulos, Apostolos ..... 25  
Bardon, Filippo ..... 63  
Barthe, L. .... 85  
Benhabiles, Halim ..... 25  
Berretti, Stefano ..... 55  
Biasotti, Silvia ..... 9, 85  
Bimbo, Alberto Del ..... 55  
Borghi, G. .... 93  
Boulch, Alexandre ..... 71  
Boyarski, A. .... 111  
Bronstein, A. M. .... 111  
Bronstein, M. M. .... 111  
Bui, Ngoc-Minh ..... 33, 41, 103  
Burato, S. .... 93  
Bustos, Benjamin ..... 17  
Caputo, F. M. .... 93  
Castellani, Umberto ..... 1, 63, 121  
Cen, Yunchi ..... 103  
Chaine, Raphaelle ..... 9  
Chang, Lufan ..... 49  
Chen, Zenian ..... 103  
Chung-Nguyen, Huy-Hoang ..... 103  
Cremers, D. .... 111  
Cucchiara, R. .... 93  
Cui, Xuefeng ..... 49  
Daras, Petros ..... 25  
Diep, Gia-Han ..... 103  
Digne, Julie ..... 9  
Ding, Zijun ..... 49  
Do, Trong-Le ..... 33, 41, 103  
Dobrovski, Eugeni L. .... 103  
Du, Xuefeng ..... 49  
Duong, Anh-Duc ..... 103  
Dyke, R. M. .... 111  
Falcidieno, B. .... 85  
Ferrari, Claudio ..... 55  
Fisher, M. .... 111  
Förster, Friedrich ..... 49  
Gao, Shan ..... 49  
Geraedts, Jo M. P. .... 103  
Giachetti, Andrea ..... 25, 93  
Giannini, Franca ..... 79  
Groueix, T. .... 111  
Gubins, Ilja ..... 49  
Guo, D. .... 111  
Guo, Haobin ..... 103  
Hammoudi, Karim ..... 25  
Han, Xusi ..... 25, 49  
Hao, Yu ..... 49  
Himes, Benjamin A. .... 49  
Hoang, Trung-Hieu ..... 103  
Hoang-Xuan, N. .... 85  
Holenderski, Mike ..... 41  
Jarnikov, Dmitri ..... 41  
Karl, Stephan ..... 17  
Kervrann, Charles ..... 49  
Kihara, Daisuke ..... 25, 49  
Kim, V. G. .... 111  
Kimmel, R. .... 111  
Komar, Alexander ..... 17  
Labrada, Arniel ..... 17  
Lähner, Z. .... 111  
Lai, Tuan M. .... 25, 49  
Lai, Y.-K. .... 111  
Langenfeld, Florent ..... 25  
LaViola Jr., J. J. .... 93  
Le, Khiem T. .... 41  
Lejembre, T. .... 85  
Lengauer, Stefan ..... 17  
Li, Bo ..... 33, 41  
Li, K. .... 111  
Li, Wenhui ..... 103  
Li, Yichen ..... 103  
Li, Yuqian ..... 103  
Litany, O. .... 111  
Liu, Anan ..... 103  
Liu, Haiguang ..... 25  
Liu, Xing ..... 103  
Liu, Zishun ..... 103  
Lu, Yijuan ..... 33, 41  
Lupinetti, Katia ..... 79  
Luu, Duc-Tuan ..... 103  
Ly, Zhilong ..... 49



## Author Index

- Ma, Yunsheng ..... 103  
Maghoubi, M. .... 93  
Manganaro, F. .... 93  
Marana, Aparecido Nilceu ..... 55  
Marin, Riccardo ..... 1, 63, 121  
Martinez-Sanchez, Antonio ..... 49  
Melkemi, Mahmoud ..... 25  
Mellado, N. .... 85  
Melzi, Simone ..... 1, 63, 121  
Menkovski, Vlado ..... 41  
Mitra, Niloy J. .... 1  
Moebel, Emmanuel ..... 49  
Montes, Matthieu ..... 25  
Monti, Marina ..... 79  
Moustakas, K. .... 85  
Musoni, Pietro ..... 63  
Mylonas, Stelios K. .... 25  
Neto, Joao Baptista Cardia ..... 55  
Nguyen, E. R. .... 85  
Nguyen, H. .... 93  
Nguyen, Khac-Tuan ..... 33, 41  
Nguyen, Thanh-An ..... 33, 41  
Nguyen, Vinh-Tiep ..... 33, 41, 103  
Nie, Jie ..... 103  
Nie, Weizhi ..... 103  
Ninh, Tu V. .... 41  
Ovsjanikov, M. .... 121  
Pavan, G. .... 93  
Pernot, Jean-Philippe ..... 79  
Pini, S. .... 93  
Poulenard, A. .... 121  
Preiner, Reinhold ..... 17  
Razmjoo, A. .... 93  
Remez, T. .... 111  
Ren, J. .... 121  
Ren, Tongwei ..... 103  
Rey, Perez ..... 41  
Rodolà, E. .... 111, 121  
Romanengo, C. .... 85  
Rosin, P. L. .... 111  
Russell, B. C. .... 111  
Sahillioglu, Y. .... 111  
Schot, Gijs van der ..... 49  
Schreck, Tobias ..... 17, 33, 41  
Slossberg, R. .... 111  
Song, Dan ..... 103  
Stride, C. .... 111  
Tam, G. K. L. .... 111  
Taranta II, E. M. .... 93  
Tarini, Marco ..... 63  
Terashi, Genki ..... 25, 49  
Thompson, Elia Moscoso ..... 9, 85  
Tran, M. .... 85  
Tran, M. T. .... 93  
Tran, Mai-Khiem ..... 103  
Tran, Minh-Triet ..... 33, 41, 103  
Tran-Nguyen, Son-Thanh ..... 103  
Trinkl, Elisabeth ..... 17  
Vandeborre, J. P. .... 93  
Velkamp, Remco C. .... 49  
Vestner, M. .... 111  
Vezzani, R. .... 93  
Voillemin, T. .... 93  
Vu-Le, The-Anh ..... 103  
Wan, Xiaohua ..... 49  
Wang, Charlie C. L. .... 103  
Wang, Shijie ..... 103  
Wang, Tianyang ..... 33, 41  
Wang, Weijie ..... 103  
Wang, Yufan ..... 25  
Wannous, H. .... 93  
Windal, Feryal ..... 25  
Wonka, P. .... 121  
Wu, Gangshan ..... 103  
Wu, Z. .... 111  
Xiang, Shu ..... 103  
Xu, Min ..... 49  
Yang, Caifei ..... 103  
Yang, J. .... 111  
Yang, Zhidong ..... 49  
Yuan, Juefei ..... 33, 41  
Yuan, Meng ..... 103  
Zeng, Xiangrui ..... 49  
Zhai, Hao ..... 103  
Zhang, Ao ..... 103  
Zhang, Fa ..... 49  
Zhang, Fan ..... 103  
Zhang, Jingrong ..... 49  
Zhao, Sicheng ..... 103  
Zhou, Heyu ..... 103  
Zhu, Zhenxi ..... 49

## **Keynote**

### **Non-isometric Shape Correspondence: Functional, Pointwise, and Everything in Between**

**Mirela Ben-Chen**

#### **Abstract**

Shape correspondence is a cornerstone of many shape analysis applications. When the shapes are similar semantically, yet are very different geometrically, e.g. a cow and a giraffe, finding a correspondence between them is a difficult task. I will discuss recent approaches to the problem of non-isometric shape correspondence, focusing on the challenges and the main insights that helped us address them. I will additionally mention interesting open problems, and some stepping stones towards future directions.

#### **Short Biography**

Mirela Ben-Chen is an Associate Professor at the Center for Graphics and Geometric Computing of the Computer Science Department, at the Technion - Israel Institute of Technology. She received her Masters and PhD degrees in Computer Science from the Technion, and spent three years at Stanford University as a Fulbright Postdoctoral Scholar. Mirela is interested in modeling and understanding the geometry of shapes. She uses mathematical tools, such as discrete differential geometry, numerical optimization and harmonic analysis, for applications such as shape correspondence, browsing shape collections and fluid simulation on surfaces. She has received multiple best paper awards and the Science Prize of the German Technion Society.