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Laura Leal-Taixé · Stefan Roth (Eds.)

# Computer Vision – ECCV 2018 Workshops

Munich, Germany, September 8–14, 2018  
Proceedings, Part II

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# Foreword

It was our great pleasure to host the European Conference on Computer Vision 2018 in Munich, Germany. This constituted by far the largest ECCV event ever. With close to 2,900 registered participants and another 600 on the waiting list one month before the conference, participation more than doubled since the last ECCV in Amsterdam. We believe that this is due to a dramatic growth of the computer vision community combined with the popularity of Munich as a major European hub of culture, science, and industry. The conference took place in the heart of Munich in the concert hall Gasteig with workshops and tutorials held on the downtown campus of the Technical University of Munich.

One of the major innovations for ECCV 2018 was the free perpetual availability of all conference and workshop papers, which is often referred to as open access. We note that this is not precisely the same use of the term as in the Budapest declaration. Since 2013, CVPR and ICCV have had their papers hosted by the Computer Vision Foundation (CVF), in parallel with the IEEE Xplore version. This has proved highly beneficial to the computer vision community.

We are delighted to announce that for ECCV 2018 a very similar arrangement was put in place with the cooperation of Springer. In particular, the author's final version will be freely available in perpetuity on a CVF page, while SpringerLink will continue to host a version with further improvements, such as activating reference links and including video. We believe that this will give readers the best of both worlds; researchers who are focused on the technical content will have a freely available version in an easily accessible place, while subscribers to SpringerLink will continue to have the additional benefits that this provides. We thank Alfred Hofmann from Springer for helping to negotiate this agreement, which we expect will continue for future versions of ECCV.

September 2018

Horst Bischof  
Daniel Cremers  
Bernt Schiele  
Ramin Zabih

# Preface

It is our great pleasure to present these workshop proceedings of the 15th European Conference on Computer Vision, which was held during September 8–14, 2018, in Munich, Germany. We are delighted that the main conference of ECCV 2018 was accompanied by 43 scientific workshops. The ECCV workshop proceedings contain contributions of 36 workshops.

We received 74 workshop proposals on a broad set of topics related to computer vision. The very high quality and the large number of proposals made the selection process rather challenging. Owing to space restrictions, only 46 proposals were accepted, among which six proposals were merged into three workshops because of overlapping themes.

The final set of 43 workshops complemented the main conference program well. The workshop topics presented a good orchestration of new trends and traditional issues, built bridges into neighboring fields, as well as discussed fundamental technologies and novel applications. We would like to thank all the workshop organizers for their unreserved efforts to make the workshop sessions a great success.

September 2018

Stefan Roth  
Laura Leal-Taixé

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### W03 – 3D Reconstruction in the Wild

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Tomas Pajdla Czech Technical University in Prague, Czechia  
Takeshi Masuda The National Institute of Advanced Industrial Science and Technology (AIST), Japan  
Shohei Nobuhara Kyoto University, Japan  
Hiroshi Kawasaki Kyushu University, Japan



### **W04 – Workshop on Visual Learning and Embodied Agents in Simulation Environments**

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Angel X. Chang	Eloquent Labs and Simon Fraser University, USA
Saurabh Gupta	University of California, Berkeley, USA
Amir R. Zamir	Stanford University and University of California, Berkeley, USA
Stefan Lee	Georgia Institute of Technology, USA
Samyak Datta	Georgia Institute of Technology, USA
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Hao Su	University of California, San Diego, USA
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Cewu Lu	Shanghai Jiao Tong University, China
Leonidas Guibas	Stanford University, USA

### **W05 – Bias Estimation in Face Analytics**

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Rogério Feris	IBM Watson Research Center, USA
Michele Merler	IBM Watson Research Center, USA
Vishal Patel	Johns Hopkins University, USA

### **W06 – 4th International Workshop on Recovering 6D Object Pose**

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Krzysztof Walas	Poznan University of Technology, Poland
Tae-Kyun Kim	Imperial College London, UK
Jiří Matas	Czech Technical University in Prague, Czechia
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Ales Leonardis	University of Birmingham, UK
Carsten Steger	Technical University of Munich, MVTec, Germany
Caner Sahin	Imperial College London, UK

### **W07 – Second International Workshop on Computer Vision for UAVs**

Kristof Van Beeck	KU Leuven, Belgium
Tinne Tuytelaars	KU Leuven, Belgium
Davide Scaramuzza	ETH Zurich, Switzerland
Toon Goedemé	KU Leuven, Belgium

**W08 – 5th Transferring and Adapting Source Knowledge in Computer Vision and Second VisDA Challenge**

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Kate Saenko	Boston University, USA
Ben Usman	Boston University, USA
Xingchao Peng	Boston University, USA
Judy Hoffman	Facebook AI Research, USA
Neela Kaushik	Boston University, USA
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Wen Li	ETH Zurich, Switzerland
Francesco Orabona	Boston University, USA

**W09 – PoseTrack Challenge: Articulated People Tracking in the Wild**

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Anton Milan	Amazon, Germany
Leonid Pishchulin	Max Planck Institute for Informatics, Germany
Christoph Lassner	Amazon, Germany
Eldar Insafutdinov	Max Planck Institute for Informatics, Germany
Siyu Tang	Max Planck Institute for Intelligent Systems, Germany
Juergen Gall	University of Bonn, Germany
Bernt Schiele	Max Planck Institute for Informatics, Germany

**W10 – Workshop on Objectionable Content and Misinformation**

Cristian Canton Ferrer	Facebook, USA
Matthias Niessner	Technical University of Munich, Germany
Paul Natsev	Google, USA
Marius Vlad	Google, Switzerland

**W11 – 9th International Workshop on Human Behavior Understanding**

Xavier Alameda-Pineda	Inria Grenoble, France
Elisa Ricci	Fondazione Bruno Kessler and University of Trento, Italy
Albert Ali Salah	Boğaziçi University, Turkey
Nicu Sebe	University of Trento, Italy
Shuicheng Yan	National University of Singapore, Singapore

**W12 – First Person in Context Workshop and Challenge**

Si Liu	Beihang University, China
Jiashi Feng	National University of Singapore, Singapore
Jizhong Han	Institute of Information Engineering, China
Shuicheng Yan	National University of Singapore, Singapore
Yao Sun	Institute of Information Engineering, China

Yue Liao	Institute of Information Engineering, China
Lejian Ren	Institute of Information Engineering, China
Guanghai Ren	Institute of Information Engineering, China

### **W13 – 4th Workshop on Computer Vision for Art Analysis**

Stuart James	Istituto Italiano di Tecnologia, Italy and University College London, UK
Leonardo Impett	EPFL, Switzerland and Biblioteca Hertziana, Max Planck Institute for Art History, Italy
Peter Hall	University of Bath, UK
João Paulo Costeira	Instituto Superior Tecnico, Portugal
Peter Bell	Friedrich-Alexander-University Nürnberg, Germany
Alessio Del Bue	Istituto Italiano di Tecnologia, Italy

### **W14 – First Workshop on Fashion, Art, and Design**

Hui Wu	IBM Research AI, USA
Negar Rostamzadeh	Element AI, Canada
Leonidas Lefakis	Zalando Research, Germany
Joy Tang	Markable, USA
Rogério Feris	IBM Research AI, USA
Tamara Berg	UNC Chapel Hill/Shopagon Inc., USA
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Chris Pal	MILA/PolyMTL, Canada
Sanja Fidler	University of Toronto, Canada
Xavier Snelgrove	Element AI, Canada
David Vazquez	Element AI, Canada
Julia Lasserre	Zalando Research, Germany
Thomas Boquet	Element AI, Canada
Nana Yamazaki	Zalando SE, Germany

### **W15 – Anticipating Human Behavior**

Juergen Gall	University of Bonn, Germany
Jan van Gemert	Delft University of Technology, The Netherlands
Kris Kitani	Carnegie Mellon University, USA

### **W16 – Third Workshop on Geometry Meets Deep Learning**

Xiaowei Zhou	Zhejiang University, China
Emanuele Rodolà	Sapienza University of Rome, Italy
Jonathan Masci	NNAISENSE, Switzerland
Kosta Derpanis	Ryerson University, Canada

**W17 – First Workshop on Brain-Driven Computer Vision**

Simone Palazzo	University of Catania, Italy
Isaak Kavasidis	University of Catania, Italy
Dimitris Kastaniotis	University of Patras, Greece
Stavros Dimitriadis	Cardiff University, UK

**W18 – Second Workshop on 3D Reconstruction Meets Semantics**

Radim Tylecek	University of Edinburgh, UK
Torsten Sattler	ETH Zurich, Switzerland
Thomas Brox	University of Freiburg, Germany
Marc Pollefeys	ETH Zurich/Microsoft, Switzerland
Robert B. Fisher	University of Edinburgh, UK
Theo Gevers	University of Amsterdam, Netherlands

**W19 – Third International Workshop on Video Segmentation**

Pablo Arbelaez	Universidad de los Andes, Columbia
Thomas Brox	University of Freiburg, Germany
Fabio Galasso	OSRAM GmbH, Germany
Iasonas Kokkinos	University College London, UK
Fuxin Li	Oregon State University, USA

**W20 – PeopleCap 2018: Capturing and Modeling Human Bodies, Faces, and Hands**

Gerard Pons-Moll	MPI for Informatics and Saarland Informatics Campus, Germany
Jonathan Taylor	Google, USA

**W21 – Workshop on Shortcomings in Vision and Language**

Dhruv Batra	Georgia Institute of Technology and Facebook AI Research, USA
Raffaella Bernardi	University of Trento, Italy
Raquel Fernández	University of Amsterdam, The Netherlands
Spandana Gella	University of Edinburgh, UK
Kushal Kafle	Rochester Institute of Technology, USA
Moin Nabi	SAP SE, Germany
Stefan Lee	Georgia Institute of Technology, USA

**W22 – Second YouTube-8M Large-Scale Video Understanding Workshop**

Apostol (Paul) Natsev	Google Research, USA
Rahul Sukthankar	Google Research, USA
Joonseok Lee	Google Research, USA
George Toderici	Google Research, USA

### **W23 – Second International Workshop on Compact and Efficient Feature Representation and Learning in Computer Vision**

Jie Qin	ETH Zurich, Switzerland
Li Liu	National University of Defense Technology, China and University of Oulu, Finland
Li Liu	Inception Institute of Artificial Intelligence, UAE
Fan Zhu	Inception Institute of Artificial Intelligence, UAE
Matti Pietikäinen	University of Oulu, Finland
Luc Van Gool	ETH Zurich, Switzerland

### **W24 – 5th Women in Computer Vision Workshop**

Zeynep Akata	University of Amsterdam, The Netherlands
Dena Bazazian	Computer Vision Center, Spain
Yana Hasson	Inria, France
Angjoo Kanazawa	UC Berkeley, USA
Hildegard Kuehne	University of Bonn, Germany
Gül Varol	Inria, France

### **W25 – Perceptual Image Restoration and Manipulation Workshop and Challenge**

Yochai Blau	Technion – Israel Institute of Technology, Israel
Roey Mechrez	Technion – Israel Institute of Technology, Israel
Radu Timofte	ETH Zurich, Switzerland
Tomer Michaeli	Technion – Israel Institute of Technology, Israel
Lihi Zelnik-Manor	Technion – Israel Institute of Technology, Israel

### **W26 – Egocentric Perception, Interaction, and Computing**

Dima Damen	University of Bristol, UK
Giuseppe Serra	University of Udine, Italy
David Crandall	Indiana University, USA
Giovanni Maria Farinella	University of Catania, Italy
Antonino Furnari	University of Catania, Italy

### **W27 – Vision Meets Drone: A Challenge**

Pengfei Zhu	Tianjin University, China
Longyin Wen	JD Finance, USA
Xiao Bian	GE Global Research, USA
Haibin Ling	Temple University, USA

### **W28 – 11th Perceptual Organization in Computer Vision Workshop on Action, Perception, and Organization**

Deepak Pathak	UC Berkeley, USA
Bharath Hariharan	Cornell University, USA

**W29 – AutoNUE: Autonomous Navigation in Unconstrained Environments**

Manmohan Chandraker	University of California San Diego, USA
C. V. Jawahar	IIIT Hyderabad, India
Anoop M. Namboodiri	IIIT Hyderabad, India
Srikumar Ramalingam	University of Utah, USA
Anbumani Subramanian	Intel, Bangalore, India

**W30 – ApolloScope: Vision-Based Navigation for Autonomous Driving**

Peng Wang	Baidu Research, USA
Ruigang Yang	Baidu Research, China
Andreas Geiger	ETH Zurich, Switzerland
Hongdong Li	Australian National University, Australia
Alan Yuille	The Johns Hopkins University, USA

**W31 – 6th International Workshop on Assistive Computer Vision and Robotics**

Giovanni Maria Farinella	University of Catania, Italy
Marco Leo	National Research Council of Italy, Italy
Gerard G. Medioni	University of Southern California, USA
Mohan Trivedi	University of California, USA

**W32 – 4th International Workshop on Observing and Understanding Hands in Action**

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Angela Yao	National University of Singapore, Singapore
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**W33 – Bioimage Computing**

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**W34 – First Workshop on Interactive and Adaptive Learning in an Open World**

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Uwe Franke	Daimler AG, Germany
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Juergen Gall	University of Bonn, Germany
Walter Scheirer	University of Notre Dame, USA
Angela Yao	University of Bonn, Germany

### **W35 – First Multimodal Learning and Applications Workshop**

Paolo Rota	University of Trento, Italy
Vittorio Murino	Istituto Italiano di Tecnologia, Italy
Michael Yang	University of Twente, The Netherlands
Bodo Rosenhahn	Leibniz-Universität Hannover, Germany

### **W36 – What Is Optical Flow for?**

Fatma Güney	Oxford University, UK
Laura Sevilla-Lara	Facebook Research, USA
Deqing Sun	NVIDIA, USA
Jonas Wulff	Massachusetts Institute of Technology, USA

### **W37 – Vision for XR**

Richard Newcombe	Facebook Reality Labs, USA
Chris Sweeney	Facebook Reality Labs, USA
Julian Straub	Facebook Reality Labs, USA
Jakob Engel	Facebook Reality Labs, USA
Michael Goesele	Technische Universität Darmstadt, Germany

### **W38 – Open Images Challenge Workshop**

Vittorio Ferrari	Google AI, Switzerland
Alina Kuznetsova	Google AI, Switzerland
Jordi Pont-Tuset	Google AI, Switzerland
Matteo Mallocci	Google AI, Switzerland
Jasper Uijlings	Google AI, Switzerland
Jake Walker	Google AI, Switzerland
Rodrigo Benenson	Google AI, Switzerland

### **W39 – VizWiz Grand Challenge: Answering Visual Questions from Blind People**

Danna Gurari	University of Texas at Austin, USA
Kristen Grauman	University of Texas at Austin, USA
Jeffrey P. Bigham	Carnegie Mellon University, USA

### **W40 – 360° Perception and Interaction**

Min Sun	National Tsing Hua University, Taiwan
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Ming-Hsuan Yang	University of California, Merced, USA

#### **W41 – Joint COCO and Mapillary Recognition Challenge Workshop**

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Holger Caesar	University of Edinburgh, UK
Jasper Uijlings	Google Research, UK
Vittorio Ferrari	University of Edinburgh and Google Research, UK

#### **W42 – First Large-Scale Video Object Segmentation Challenge**

Ning Xu	Adobe Research, USA
Linjie Yang	SNAP Research, USA
Yuchen Fan	University of Illinois at Urbana-Champaign, USA
Jianchao Yang	SNAP Research, USA
Weiyao Lin	Shanghai Jiao Tong University, China
Michael Ying Yang	University of Twente, The Netherlands
Brian Price	Adobe Research, USA
Jiebo Luo	University of Rochester, USA
Thomas Huang	University of Illinois at Urbana-Champaign, USA



**W43 – WIDER Face and Pedestrian Challenge**

Chen Change Loy	Nanyang Technological University, Singapore
Dahua Lin	The Chinese University of Hong Kong, SAR China
Wanli Ouyang	University of Sydney, Australia
Yuanjun Xiong	Amazon Rekognition, USA
Shuo Yang	Amazon Rekognition, USA
Qingqiu Huang	The Chinese University of Hong Kong, SAR China
Dongzhan Zhou	SenseTime, China
Wei Xia	Amazon Rekognition, USA
Quanquan Li	SenseTime, China
Ping Luo	The Chinese University of Hong Kong, SAR China
Junjie Yan	SenseTime, China

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