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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 at 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

Welcome to the proceedings of the 2018 European Conference on Computer Vision (ECCV 2018) held in Munich, Germany. We are delighted to present this volume reflecting a strong and exciting program, the result of an extensive review process. In total, we received 2,439 valid paper submissions. Of these, 776 were accepted (31.8%): 717 as posters (29.4%) and 59 as oral presentations (2.4%). All oral presentations were presented as posters as well. The program selection process was complicated this year by the large increase in the number of submitted papers, +65% over ECCV 2016, and the use of CMT3 for the first time for a computer vision conference. The program selection process was supported by four program co-chairs (PCs), 126 area chairs (ACs), and 1,199 reviewers with reviews assigned.

We were primarily responsible for the design and execution of the review process. Beyond administrative rejections, we were involved in acceptance decisions only in the very few cases where the ACs were not able to agree on a decision. As PCs, and as is customary in the field, we were not allowed to co-author a submission. General co-chairs and other co-organizers who played no role in the review process were permitted to submit papers, and were treated as any other author is.

Acceptance decisions were made by two independent ACs. The ACs also made a joint recommendation for promoting papers to oral status. We decided on the final selection of oral presentations based on the ACs' recommendations. There were 126 ACs, selected according to their technical expertise, experience, and geographical diversity (63 from European, nine from Asian/Australian, and 54 from North American institutions). Indeed, 126 ACs is a substantial increase in the number of ACs due to the natural increase in the number of papers and to our desire to maintain the number of papers assigned to each AC to a manageable number so as to ensure quality. The ACs were aided by the 1,199 reviewers to whom papers were assigned for reviewing. The Program Committee was selected from committees of previous ECCV, ICCV, and CVPR conferences and was extended on the basis of suggestions from the ACs. Having a large pool of Program Committee members for reviewing allowed us to match expertise while reducing reviewer loads. No more than eight papers were assigned to a reviewer, maintaining the reviewers' load at the same level as ECCV 2016 despite the increase in the number of submitted papers.

Conflicts of interest between ACs, Program Committee members, and papers were identified based on the home institutions, and on previous collaborations of all researchers involved. To find institutional conflicts, all authors, Program Committee members, and ACs were asked to list the Internet domains of their current institutions. We assigned on average approximately 18 papers to each AC. The papers were assigned using the affinity scores from the Toronto Paper Matching System (TPMS) and additional data from the OpenReview system, managed by a UMass group. OpenReview used additional information from ACs' and authors' records to identify collaborations and to generate matches. OpenReview was invaluable in

refining conflict definitions and in generating quality matches. The only glitch is that, once the matches were generated, a small percentage of papers were unassigned because of discrepancies between the OpenReview conflicts and the conflicts entered in CMT3. We manually assigned these papers. This glitch is revealing of the challenge of using multiple systems at once (CMT3 and OpenReview in this case), which needs to be addressed in future.

After assignment of papers to ACs, the ACs suggested seven reviewers per paper from the Program Committee pool. The selection and rank ordering were facilitated by the TPMS affinity scores visible to the ACs for each paper/reviewer pair. The final assignment of papers to reviewers was generated again through OpenReview in order to account for refined conflict definitions. This required new features in the OpenReview matching system to accommodate the ECCV workflow, in particular to incorporate selection ranking, and maximum reviewer load. Very few papers received fewer than three reviewers after matching and were handled through manual assignment. Reviewers were then asked to comment on the merit of each paper and to make an initial recommendation ranging from definitely reject to definitely accept, including a borderline rating. The reviewers were also asked to suggest explicit questions they wanted to see answered in the authors' rebuttal. The initial review period was five weeks. Because of the delay in getting all the reviews in, we had to delay the final release of the reviews by four days. However, because of the slack included at the tail end of the schedule, we were able to maintain the decision target date with sufficient time for all the phases. We reassigned over 100 reviews from 40 reviewers during the review period. Unfortunately, the main reason for these reassignments was reviewers declining to review, after having accepted to do so. Other reasons included technical relevance and occasional unidentified conflicts. We express our thanks to the emergency reviewers who generously accepted to perform these reviews under short notice. In addition, a substantial number of manual corrections had to do with reviewers using a different email address than the one that was used at the time of the reviewer invitation. This is revealing of a broader issue with identifying users by email addresses that change frequently enough to cause significant problems during the timespan of the conference process.

The authors were then given the opportunity to rebut the reviews, to identify factual errors, and to address the specific questions raised by the reviewers over a seven-day rebuttal period. The exact format of the rebuttal was the object of considerable debate among the organizers, as well as with prior organizers. At issue is to balance giving the author the opportunity to respond completely and precisely to the reviewers, e.g., by including graphs of experiments, while avoiding requests for completely new material or experimental results not included in the original paper. In the end, we decided on the two-page PDF document in conference format. Following this rebuttal period, reviewers and ACs discussed papers at length, after which reviewers finalized their evaluation and gave a final recommendation to the ACs. A significant percentage of the reviewers did enter their final recommendation if it did not differ from their initial recommendation. Given the tight schedule, we did not wait until all were entered.

After this discussion period, each paper was assigned to a second AC. The AC/paper matching was again run through OpenReview. Again, the OpenReview team worked quickly to implement the features specific to this process, in this case accounting for the

existing AC assignment, as well as minimizing the fragmentation across ACs, so that each AC had on average only 5.5 buddy ACs to communicate with. The largest number was 11. Given the complexity of the conflicts, this was a very efficient set of assignments from OpenReview. Each paper was then evaluated by its assigned pair of ACs. For each paper, we required each of the two ACs assigned to certify both the final recommendation and the metareview (aka consolidation report). In all cases, after extensive discussions, the two ACs arrived at a common acceptance decision. We maintained these decisions, with the caveat that we did evaluate, sometimes going back to the ACs, a few papers for which the final acceptance decision substantially deviated from the consensus from the reviewers, amending three decisions in the process.

We want to thank everyone involved in making ECCV 2018 possible. The success of ECCV 2018 depended on the quality of papers submitted by the authors, and on the very hard work of the ACs and the Program Committee members. We are particularly grateful to the OpenReview team (Melisa Bok, Ari Kobren, Andrew McCallum, Michael Spector) for their support, in particular their willingness to implement new features, often on a tight schedule, to Laurent Charlin for the use of the Toronto Paper Matching System, to the CMT3 team, in particular in dealing with all the issues that arise when using a new system, to Friedrich Fraundorfer and Quirin Lohr for maintaining the online version of the program, and to the CMU staff (Keyla Cook, Lynnetta Miller, Ashley Song, Nora Kazour) for assisting with data entry/editing in CMT3. Finally, the preparation of these proceedings would not have been possible without the diligent effort of the publication chairs, Albert Ali Salah and Hamdi Dibeklioğlu, and of Anna Kramer and Alfred Hofmann from Springer.

September 2018

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Abhishek Kar
Amlan Kar
Svebor Karaman
Leonid Karlinsky
Zoltan Kato
Parneet Kaur
Hiroshi Kawasaki
Misha Kazhdan
Margret Keuper
Sameh Khamis
Naeemullah Khan
Salman Khan
Hadi Kiapour
Joe Kileel
Chanho Kim
Gunhee Kim
Hansung Kim
Junmo Kim
Junsik Kim
Kihwan Kim
Minyoung Kim
Tae Hyun Kim
Tae-Kyun Kim
Akisato Kimura
Zsolt Kira
Alexander Kirillov
Kris Kitani
Maria Klodt
Patrick Knöbelreiter
Jan Knopp
Reinhard Koch
Alexander Kolesnikov
Chen Kong
Naejin Kong
Shu Kong
Piotr Koniusz
Simon Korman
Andreas Koschan
Dimitrios Kosmopoulos
Satwik Kottur
Balazs Kovacs
Adarsh Kowdle
Mike Krainin
Gregory Kramida
Ranjay Krishna
Ravi Krishnan
Matej Kristan
Pavel Krsek
Volker Krueger
Alexander Krull
Hilde Kuehne
Andreas Kuhn
Arjan Kuijper
Zuzana Kukelova
Kuldeep Kulkarni
Shiro Kumano
Avinash Kumar
Vijay Kumar
Abhijit Kundu
Sebastian Kurtek
Junseok Kwon
Jan Kybic
Alexander Ladikos
Shang-Hong Lai
Wei-Sheng Lai
Jean-Francois Lalonde
John Lambert
Zhenzhong Lan
Charis Lanaras
Oswald Lanz
Dong Lao
Longin Jan Latecki
Justin Lazarow
Huu Le
Chen-Yu Lee
Gim Hee Lee
Honglak Lee
Hsin-Ying Lee
Joon-Young Lee
Seungyong Lee
Stefan Lee
Yong Jae Lee
Zhen Lei
Ido Leichter
Victor Lempitsky
Spyridon Leonardos
Marius Leordeanu
Matt Leotta
Thomas Leung
Stefan Leutenegger
Gil Levi
Aviad Levis
Jose Lezama
Ang Li
Dingzeyu Li
Dong Li
Haoxiang Li
Hongdong Li
Hongsheng Li
Hongyang Li
Jianguo Li
Kai Li
Ruiyu Li
Wei Li
Wen Li
Xi Li
Xiaoxiao Li
Xin Li
Xirong Li
Xuelong Li
Xueting Li
Yeqing Li
Yijun Li
Yin Li
Yingwei Li
Yining Li
Yongjie Li
Yu-Feng Li
Zechao Li
Zhengqi Li
Zhenyang Li
Zhizhong Li
Xiaodan Liang
Renjie Liao
Zicheng Liao
Bee Lim
Jongwoo Lim
Joseph Lim
Ser-Nam Lim
Chen-Hsuan Lin

Shih-Yao Lin
Tsung-Yi Lin
Weiyao Lin
Yen-Yu Lin
Haibin Ling
Or Litany
Roee Litman
Anan Liu
Changsong Liu
Chen Liu
Ding Liu
Dong Liu
Feng Liu
Guangcan Liu
Luoqi Liu
Miaomiao Liu
Nian Liu
Risheng Liu
Shu Liu
Shuaicheng Liu
Sifei Liu
Tyng-Luh Liu
Wanquan Liu
Weiwei Liu
Xialei Liu
Xiaoming Liu
Yebin Liu
Yiming Liu
Ziwei Liu
Zongyi Liu
Liliana Lo Presti
Edgar Lobaton
Chengjiang Long
Mingsheng Long
Roberto Lopez-Sastre
Amy Loufti
Brian Lovell
Canyi Lu
Cewu Lu
Feng Lu
Huchuan Lu
Jiajun Lu
Jiasen Lu
Jiwen Lu
Yang Lu
Yujuan Lu
Simon Lucey
Jian-Hao Luo
Jiebo Luo
Pablo Márquez-Neila
Matthias Müller
Chao Ma
Chih-Yao Ma
Lin Ma
Shugao Ma
Wei-Chiu Ma
Zhanyu Ma
Oisin Mac Aodha
Will Maddern
Ludovic Magerand
Marcus Magnor
Vijay Mahadevan
Mohammad Mahoor
Michael Maire
Subhransu Maji
Ameesh Makadia
Atsuto Maki
Yasushi Makihara
Mateusz Malinowski
Tomasz Malisiewicz
Arun Mallya
Roberto Manduchi
Junhua Mao
Dmitrii Marin
Joe Marino
Kenneth Marino
Elisabeta Marinoiu
Ricardo Martin
Aleix Martinez
Julieta Martinez
Aaron Maschinot
Jonathan Masci
Bogdan Matei
Diana Mateus
Stefan Mathe
Kevin Matzen
Bruce Maxwell
Steve Maybank
Walterio Mayol-Cuevas
Mason McGill
Stephen Mckenna
Roey Mechrez
Christopher Mei
Heydi Mendez-Vazquez
Deyu Meng
Thomas Mensink
Bjoern Menze
Domingo Mery
Qiguang Miao
Tomer Michaeli
Antoine Miech
Ondrej Miksik
Anton Milan
Gregor Miller
Cai Minjie
Majid Mirmehdi
Ishan Misra
Niloy Mitra
Anurag Mittal
Nirbhay Modhe
Davide Modolo
Pritish Mohapatra
Pascal Monasse
Mathew Monfort
Taesup Moon
Sandino Morales
Vlad Morariu
Philippos Mordohai
Francesc Moreno
Henrique Morimitsu
Yael Moses
Ben-Ezra Moshe
Roozbeh Mottaghi
Yadong Mu
Lopamudra Mukherjee
Mario Munich
Ana Murillo
Damien Muselet
Armin Mustafa
Siva Karthik Mustikovela
Moin Nabi
Sobhan Naderi
Hajime Nagahara
Varun Nagaraja
Tushar Nagarajan
Arsha Nagrani
Nikhil Naik
Atsushi Nakazawa

P. J. Narayanan
Charlie Nash
Lakshmanan Nataraj
Fabian Nater
Lukáš Neumann
Natalia Neverova
Alejandro Newell
Phuc Nguyen
Xiaohan Nie
David Nilsson
Ko Nishino
Zhenxing Niu
Shohei Nobuhara
Klas Nordberg
Mohammed Norouzi
David Novotny
Ifeoma Nwogu
Matthew O'Toole
Guillaume Obozinski
Jean-Marc Odobez
Eyal Ofek
Ferda Ofli
Tae-Hyun Oh
Iason Oikonomidis
Takeshi Oishi
Takahiro Okabe
Takayuki Okatani
Vlad Olaru
Michael Opitz
Jose Oramas
Vicente Ordonez
Ivan Oseledets
Aljosa Osep
Magnus Oskarsson
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Wanli Ouyang
Andrew Owens
Mustafa Özuysal
Jinshan Pan
Xingang Pan
Rameswar Panda
Sharath Pankanti
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Nicolas Papadakis
George Papandreou
N. Papanikolopoulos
Hyun Soo Park
In Kyu Park
Jaesik Park
Omkar Parkhi
Alvaro Parra Bustos
C. Alejandro Parraga
Vishal Patel
Deepak Pathak
Ioannis Patras
Viorica Patraucean
Genevieve Patterson
Kim Pedersen
Robert Peharz
Selen Pehlivan
Xi Peng
Bojan Pepik
Talita Perciano
Federico Pernici
Adrian Peter
Stavros Petridis
Vladimir Petrovic
Henning Petzka
Tomas Pfister
Trung Pham
Justus Piater
Massimo Piccardi
Sudeep Pillai
Pedro Pinheiro
Lerrel Pinto
Bernardo Pires
Aleksis Pirinen
Fiora Pirri
Leonid Pischulin
Tobias Ploetz
Bryan Plummer
Yair Poleg
Jean Ponce
Gerard Pons-Moll
Jordi Pont-Tuset
Alin Popa
Fatih Porikli
Horst Possegger
Viraj Prabhu
Andrea Prati
Maria Priisalu
Véronique Prinet
Victor Prisacariu
Jan Prokaj
Nicolas Pugeault
Luis Puig
Ali Punjani
Senthil Purushwalkam
Guido Pusiol
Guo-Jun Qi
Xiaojuan Qi
Hongwei Qin
Shi Qiu
Faisal Qureshi
Matthias Rüther
Petia Radeva
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Swaminathan Rahul
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Kandan Ramakrishnan
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Sai Ravela
Avinash Ravichandran
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Michal Reinstein
Konstantinos Rematas
Haibing Ren
Shaoqing Ren
Wenqi Ren
Zhile Ren
Hamid Rezatofighi
Nicholas Rhinehart
Helge Rhodin
Elisa Ricci
Eitan Richardson
Stephan Richter

Gernot Riegler
Hayko Riemenschneider
Tammy Riklin Raviv
Ergys Ristani
Tobias Ritschel
Mariano Rivera
Samuel Rivera
Antonio Robles-Kelly
Ignacio Rocco
Jason Rock
Emanuele Rodola
Mikel Rodriguez
Gregory Rogez
Marcus Rohrbach
Gemma Roig
Javier Romero
Olaf Ronneberger
Amir Rosenfeld
Bodo Rosenhahn
Guy Rosman
Arun Ross
Samuel Rota Bulò
Peter Roth
Constantin Rothkopf
Sebastien Roy
Amit Roy-Chowdhury
Ognjen Rudovic
Adria Ruiz
Javier Ruiz-del-Solar
Christian Rupprecht
Olga Russakovsky
Chris Russell
Alexandre Sablayrolles
Fereshteh Sadeghi
Ryusuke Sagawa
Hideo Saito
Elham Sakhaee
Albert Ali Salah
Conrad Sanderson
Koppal Sanjeev
Aswin Sankaranarayanan
Elham Saraee
Jason Saragih
Sudeep Sarkar
Imari Sato
Shin'ichi Satoh
Torsten Sattler
Bogdan Savchynskyy
Johannes Schönberger
Hanno Scharr
Walter Scheirer
Bernt Schiele
Frank Schmidt
Tanner Schmidt
Dirk Schnieders
Samuel Schulter
William Schwartz
Alexander Schwing
Ozan Sener
Soumyadip Sengupta
Laura Sevilla-Lara
Mubarak Shah
Shishir Shah
Fahad Shahbaz Khan
Amir Shahroudy
Jing Shao
Xiaowei Shao
Roman Shapovalov
Nataliya Shapovalova
Ali Sharif Razavian
Gaurav Sharma
Mohit Sharma
Pramod Sharma
Viktoriia Sharmanska
Eli Shechtman
Mark Sheinin
Evan Shelhamer
Chunhua Shen
Li Shen
Wei Shen
Xiaohui Shen
Xiaoyong Shen
Ziyi Shen
Lu Sheng
Baoguang Shi
Boxin Shi
Kevin Shih
Hyunjung Shim
Ilan Shimshoni
Young Min Shin
Koichi Shinoda
Matthew Shreve
Tianmin Shu
Zhixin Shu
Kaleem Siddiqi
Gunnar Sigurdsson
Nathan Silberman
Tomas Simon
Abhishek Singh
Gautam Singh
Maneesh Singh
Praveer Singh
Richa Singh
Saurabh Singh
Sudipta Sinha
Vladimir Smutny
Noah Snavely
Cees Snoek
Kihyuk Sohn
Eric Sommerlade
Sanghyun Son
Bi Song
Shiyu Song
Shuran Song
Xuan Song
Yale Song
Yang Song
Yibing Song
Lorenzo Sorgi
Humberto Sossa
Pratul Srinivasan
Michael Stark
Bjorn Stenger
Rainer Stiefelhagen
Joerg Stueckler
Jan Stuehmer
Hang Su
Hao Su
Shuochen Su
R. Subramanian
Yusuke Sugano
Akihiro Sugimoto
Baochen Sun
Chen Sun
Jian Sun
Jin Sun
Lin Sun
Min Sun

Qing Sun
Zhaohui Sun
David Suter
Eran Swears
Raza Syed Hussain
T. Syeda-Mahmood
Christian Szegedy
Duy-Nguyen Ta
Tolga Taşdizen
Hemant Tagare
Yuichi Taguchi
Ying Tai
Yu-Wing Tai
Jun Takamatsu
Hugues Talbot
Toru Tamak
Robert Tamburo
Chaowei Tan
Meng Tang
Peng Tang
Siyu Tang
Wei Tang
Junli Tao
Ran Tao
Xin Tao
Makarand Tapaswi
Jean-Philippe Tarel
Maxim Tatarchenko
Bugra Tekin
Demetri Terzopoulos
Christian Theobalt
Diego Thomas
Rajat Thomas
Qi Tian
Xinmei Tian
YingLi Tian
Yonghong Tian
Yonglong Tian
Joseph Tighe
Radu Timofte
Massimo Tistarelli
Sinisa Todorovic
Pavel Tokmakov
Giorgos Tolias
Federico Tombari
Tatiana Tommasi
Chetan Tonde
Xin Tong
Akihiko Torii
Andrea Torsello
Florian Trammer
Du Tran
Quoc-Huy Tran
Rudolph Triebel
Alejandro Troccoli
Leonardo Trujillo
Tomasz Trzcinski
Sam Tsai
Yi-Hsuan Tsai
Hung-Yu Tseng
Vagia Tsiminaki
Aggeliki Tsoli
Wei-Chih Tu
Shubham Tulsiani
Fred Tung
Tony Tung
Matt Turek
Oncel Tuzel
Georgios Tzimiropoulos
Ilkay Ulusoy
Osman Ulusoy
Dmitry Ulyanov
Paul Upchurch
Ben Usman
Evgeniya Ustinova
Himanshu Vajaria
Alexander Vakhitov
Jack Valmadre
Ernest Valveny
Jan van Gemert
Grant Van Horn
Jagannadan Varadarajan
Gul Varol
Sebastiano Vascon
Francisco Vasconcelos
Mayank Vatsa
Javier Vazquez-Corral
Ramakrishna Vedantam
Ashok Veeraraghavan
Andreas Veit
Raviteja Vemulapalli
Jonathan Ventura
Matthias Vestner
Minh Vo
Christoph Vogel
Michele Volpi
Carl Vondrick
Sven Wachsmuth
Toshikazu Wada
Michael Waechter
Catherine Wah
Jacob Walker
Jun Wan
Boyu Wang
Chen Wang
Chunyu Wang
De Wang
Fang Wang
Hongxing Wang
Hua Wang
Jiang Wang
Jingdong Wang
Jinglu Wang
Jue Wang
Le Wang
Lei Wang
Lezi Wang
Liang Wang
Lichao Wang
Lijun Wang
Limin Wang
Liwei Wang
Naiyan Wang
Oliver Wang
Qi Wang
Ruiping Wang
Shenlong Wang
Shu Wang
Song Wang
Tao Wang
Xiaofang Wang
Xiaolong Wang
Xinchao Wang
Xinggang Wang
Xintao Wang
Yang Wang
Yu-Chiang Frank Wang
Yu-Xiong Wang

Zhaowen Wang
Zhe Wang
Anne Wannenwetsch
Simon Warfield
Scott Wehrwein
Donglai Wei
Ping Wei
Shih-En Wei
Xiu-Shen Wei
Yichen Wei
Xie Weidi
Philippe Weinzaepfel
Longyin Wen
Eric Wengrowski
Tomas Werner
Michael Wilber
Rick Wildes
Olivia Wiles
Kyle Wilson
David Wipf
Kwan-Yee Wong
Daniel Worrall
John Wright
Baoyuan Wu
Chao-Yuan Wu
Jiajun Wu
Jianxin Wu
Tianfu Wu
Xiaodong Wu
Xiaohe Wu
Xinxiao Wu
Yang Wu
Yi Wu
Ying Wu
Yuxin Wu
Zheng Wu
Stefanie Wuhrer
Yin Xia
Tao Xiang
Yu Xiang
Lei Xiao
Tong Xiao
Yang Xiao
Cihang Xie
Dan Xie
Jianwen Xie
Jin Xie
Lingxi Xie
Pengtao Xie
Saining Xie
Wenxuan Xie
Yuchen Xie
Bo Xin
Junliang Xing
Peng Xingchao
Bo Xiong
Fei Xiong
Xuehan Xiong
Yuanjun Xiong
Chenliang Xu
Danfei Xu
Huijuan Xu
Jia Xu
Weipeng Xu
Xiangyu Xu
Yan Xu
Yuanlu Xu
Jia Xue
Tianfan Xue
Erdem Yörük
Abhay Yadav
Deshraj Yadav
Payman Yadollahpour
Yasushi Yagi
Toshihiko Yamasaki
Fei Yan
Hang Yan
Junchi Yan
Junjie Yan
Sijie Yan
Keiji Yanai
Bin Yang
Chih-Yuan Yang
Dong Yang
Herb Yang
Jianchao Yang
Jianwei Yang
Jiaolong Yang
Jie Yang
Jimei Yang
Jufeng Yang
Linjie Yang
Michael Ying Yang
Ming Yang
Ruiduo Yang
Ruigang Yang
Shuo Yang
Wei Yang
Xiaodong Yang
Yanchao Yang
Yi Yang
Angela Yao
Bangpeng Yao
Cong Yao
Jian Yao
Ting Yao
Julian Yarkony
Mark Yatskar
Jinwei Ye
Mao Ye
Mei-Chen Yeh
Raymond Yeh
Serena Yeung
Kwang Moo Yi
Shuai Yi
Alper Yılmaz
Lijun Yin
Xi Yin
Zhaozheng Yin
Xianghua Ying
Ryo Yonetani
Donghyun Yoo
Ju Hong Yoon
Kuk-Jin Yoon
Chong You
Shaodi You
Aron Yu
Fisher Yu
Gang Yu
Jingyi Yu
Ke Yu
Licheng Yu
Pei Yu
Qian Yu
Rong Yu
Shoou-I Yu
Stella Yu
Xiang Yu

Yang Yu
Zhiding Yu
Ganzhao Yuan
Jing Yuan
Junsong Yuan
Lu Yuan
Stefanos Zafeiriou
Sergey Zagoruyko
Amir Zamir
K. Zampogiannis
Andrei Zanfir
Mihai Zanfir
Pablo Zegers
Eyasu Zemene
Andy Zeng
Xingyu Zeng
Yun Zeng
De-Chuan Zhan
Cheng Zhang
Dong Zhang
Guofeng Zhang
Han Zhang
Hang Zhang
Hanwang Zhang
Jian Zhang
Jianguo Zhang
Jianming Zhang
Jiawei Zhang
Junping Zhang
Lei Zhang
Linguang Zhang
Ning Zhang
Qing Zhang
Quanshi Zhang
Richard Zhang
Runze Zhang
Shanshan Zhang
Shiliang Zhang
Shu Zhang
Ting Zhang
Xiangyu Zhang
Xiaofan Zhang
Xu Zhang
Yimin Zhang
Yinda Zhang
Yongqiang Zhang
Yuting Zhang
Zhanpeng Zhang
Ziyu Zhang
Bin Zhao
Chen Zhao
Hang Zhao
Hengshuang Zhao
Qijun Zhao
Rui Zhao
Yue Zhao
Enliang Zheng
Liang Zheng
Stephan Zheng
Wei-Shi Zheng
Wenming Zheng
Yin Zheng
Yinqiang Zheng
Yuanjie Zheng
Guangyu Zhong
Bolei Zhou
Guang-Tong Zhou
Huiyu Zhou
Jiahuan Zhou
S. Kevin Zhou
Tinghui Zhou
Wengang Zhou
Xiaowei Zhou
Xingyi Zhou
Yin Zhou
Zihan Zhou
Fan Zhu
Guangming Zhu
Ji Zhu
Jiejie Zhu
Jun-Yan Zhu
Shizhan Zhu
Siyu Zhu
Xiangxin Zhu
Xiatian Zhu
Yan Zhu
Yingying Zhu
Yixin Zhu
Yuke Zhu
Zhenyao Zhu
Liansheng Zhuang
Zeeshan Zia
Karel Zimmermann
Daniel Zoran
Danping Zou
Qi Zou
Silvia Zuffi
Wangmeng Zuo
Xinxin Zuo

Contents – Part I