Column: From the Editor

Best of the Best

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We announce the first best paper awards for papers published in 2019 as well as best AE awards, outline what is in store for 2021, and thank departing and incoming staff.

First, we hope that you are doing well in these difficult times. It has been difficult for scientific publishing as well, as many conferences are experiencing a drop in submissions. Hence, we are grateful to our authors for submitting high-quality work to CG&A. In fact, we have been publishing high-quality contributions for the past 40 years! This amazing milestone will be celebrated next year. However, I am very proud to announce that we are starting to celebrate our best authors with this issue. We are announcing the winner of the inaugural IEEE CG&A Best Paper Award for 2019, in a dedicated section below. The award is being handed out for the first time, sponsored by the IEEE Computer Society.

After 40 years of CG&A, we are excited to still be on the edge of all things computer graphics, visualization, and virtual reality, as the lineup of special issues for 2021 demonstrates. Besides a highly exciting special issue on climate change coming in January, we have theme issues lined up on geometric modeling and processing, *real* virtual reality, powering visualization with deep learning, as well as on visualization education and visualization literacy. This should be an exciting year, covering really the full spectrum of "computer graphics and applications." Please consider submitting your work.

Our current special theme on data physicalization had so many high quality and novel submissions, that we are not able to print them all in this issue (due to page budgets). Hence, we needed to split the issue with a second half being published in January. I am extremely grateful to the guest editor team that pulled together a truly interdisciplinary and novel group of papers and researchers. We hope it will expand your horizons as much as ours.

BEST PAPER AWARD 2019

Earlier this year, the CS Publication Board announced the start of a Best Paper Award Program. The objective of this program is to acknowledge and reward the best articles published in the previous year in each transactions and magazine fully sponsored by the IEEE Computer Society.

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The selection of the 2019 IEEE CG&A Best Paper Award was conducted by a small committee chaired by the Associate Editor-in-Chief Richard Zhang. The committee solicited paper nominations from guest editors of the special issues in 2019 and Associate Editors of regular queue articles and made its recommendation to Editor-in-Chief Torsten Möller. The Editor-in-Chief then sent his recommendation to the IEEE Computer Society Publication Board. The **2019 winner**, as conferred by the Publication Board, is

Victor Dibia and **Cagatay Demiralp**, "Data2Vis: Automatic Generation of Data Visualizations Using Sequence-to-Sequence Recurrent Neural Networks," *IEEE Computer Graphics & Applications*, vol. 39, no. 5, pp. 33–46, 2019; https://doi.ieeecomputersociety.org/10.1109/MCG.2019.2924636.

Victor Dibia is a Machine Learning Research Engineer at Cloudera Fast Forward Labs and Cagatay Demiralp is a Senior Research Scientist at Megagon Labs. The awarded paper was part of the IEEE CG&A Special Issue on Visual Data Science in 2019. It presents the first effort that automatically generates visualizations by applying deep neural translation to a set of visualization examples. The problem formulation and the Data2Vis model in the paper hold great potential to facilitate future development of learning-based approaches for visualization generation. By the time of award nominations, this article already had 18 citations (now 31), more than any other paper nominated for the award, attesting to its potential large impact in the field.

The **runner-up** goes to

Lei Li, **Hongbo Fu**, and **Chiew-Lan Tai**, "Fast Sketch Segmentation and Labeling with Deep Learning", *IEEE Computer Graphics & Applications*, vol. 39, no. 2, pp. 38–51, 2019; https://doi.org/10.1109/MCG.2018.2884192.

Lei Li and Chiew-Lan Tai are from the Hong Kong University of Science and Technology, and Hongbo Fu is from the City University of Hong Kong. This article was part of the IEEE CG&A Special Issue on Deep Learning in Computer Graphics in 2019. It presents a simple and efficient method based on deep learning for segmenting hand-drawn sketches of objects with the help of a 3-D segmentation dataset. The method provides a new learning method that can bridge the gap between 3-D and 2-D datasets.

BEST AE AWARD AND NEW AND OUTGOING EDITORIAL BOARD MEMBERS

We constantly renew our editorial board, not because we do not like someone, but because we appreciate everybody's work. That means that we need to let the hard-working folks that served for four years get on with their lives and make room for someone new. Likewise, there are many researchers in our large community who are willing to help out (and we are grateful).

On the side of regular queue papers, we want to recognize **Ligang Liu** and **Peter Wonka**, both outgoing associated editors (AEs), with the **Best AE Awards**! During their tenure as AEs, they have handled more papers than most, with timeliness and the greatest attention-to-details. Thank you!

In addition, we thank Takeo Igarashi and Nathalie Henry Riche for their tireless work in finding reviewers and giving all authors helpful feedback on their submissions.

And finally, I am happy to welcome our new class of AEs, a diverse group consisting of Duygu Ceylan (Adobe), Chi-Wing Fu (Chinese University of Hong Kong), Ruizhen Hu (Shenzhen University), Souraia Raupp Musse (Pontifical Catholic University of Rio Grande do Sul), Soren Pirk (Google), and Nobuyuki Umetani (University of Tokyo), with introductions to follow.

Duygu Ceylan (www.duyguceylan.com) is a Senior Research Scientist with Adobe Research. Her research focuses on machine learning techniques and general computational methods to infer and analyze 3-D information from images and videos. In her Ph.D. work at EPFL, Switzerland, she focused on using computational shape understanding, specifically exploring symmetry priors, in the context of 3-D reconstruction. More recently, she explores machine learning methods for 3-D scene understanding, geometry reconstruction, as well as human modeling. Her work enables high-level understanding of visual and geometric data thus facilitating novel interaction schemes with applications ranging from image manipulation, human modeling, motion retargeting, to mechanism design. She has an impressive record of scientific achievements with a significant number of publications in the top venues of computer graphics (ACM SIGGRAPH, CGF), computer vision

(CVPR, ECCV, ICCV), and machine learning. She received the Eurographics Dissertation Award in 2015 and more recently she was awarded with the Eurographics Young Researcher Award.

Chi-Wing Fu (http://www.cse.cuhk.edu.hk/~cwfu/) is currently an Associate Professor with the Chinese University of Hong Kong. He served as the co-chair of SIGGRAPH ASIA 2016's Technical Brief and Poster program, Associate Editor of Computer Graphics Forum, and a panel member in SIGGRAPH 2019 Doctoral Consortium, as well as program committee member in various research conferences, including SIGGRAPH Asia Technical Brief, SIGGRAPH Asia Emerging Technology, IEEE visualization, CVPR, IEEE VR, VRST, Pacific Graphics, GMP, etc. His recent research interests include computation fabrication, point cloud processing, 3-D computer vision, user interaction, and data visualization.

Ruizhen Hu (http://csse.szu.edu.cn/staff/ruizhenhu/) is an Assistant Professor with Shenzhen University, China. She received the Ph.D. degree from the Department of Mathematics, Zhejiang University. Before that, she spent two years visiting Simon Fraser University, Canada. Her research interests include computer graphics, with a recent focus on applying machine learning to advance the understanding and generative modeling of visual data including 3-D shapes and indoor scenes. She has received several research awards including the Asia Graphics "Young Researcher Award" in 2019, among others. She is an editorial board member of *The Visual Computer*, and has served as program co-chair for Shape Modeling International (SMI) 2020 and a member of the SIGGRAPH Asia 2019 and SIGGRAPH 2020 papers committees.

Soraia Raupp Musse (https://www.inf.pucrs.br/smusse/) is an Associate Professor with the School of Technology, Pontifical Catholic University of Rio Grande do Sul (Brazil), where she created and coordinates the Virtual Human Laboratory. Her research interests include crowd simulation and analysis, facial animation, and integration of computer graphics, pattern recognition and computer vision. She received the Ph.D. degree in computer science from the Ecole Polytechnique Fèdérale de Lausanne, Switzerland, where she was supervised by Prof. Daniel Thalmann. Recently, she spent a year at UPENN (USA) working as a visiting scholar with Prof. Norman Badler. She has supervised more than 40 graduate students and postdocs and published more than 160 peer-reviewed papers in journals and conferences. She also published four books in the domain of Crowd Simulation with Springer-Verlag.

Soeren Pirk (http://www.pirk.io) is a Researcher and Software Engineer with the Google AI team. Prior to joining Google, he was a Visiting Assistant Professor with the Geometry Lab of the Computer Science Department, Stanford University, supported by the Max Planck Center for Visual Computing and Communication and the SAIL-Toyota Center for AI Research. He received the Ph.D. degree from the University of Konstanz, Germany, in 2013. During his academic studies, he spent several months with the Shenzhen Institute of Advanced Technology, China. He has also conducted internships and research stays at companies such as Microsoft and Esri. His research interests include machine learning, visual computing, and robotics. He is working on learning representations of objects, scenes, and tasks, where the focus is on enabling more advanced behavior of autonomous systems. Moreover, he is interested in developing efficient geometric representations that enable simulating and modeling natural phenomena and scenes. In the past, he has worked on topics such as understanding physical interactions, robotic manipulation, learning from demonstration, domain adaptation, and simulating natural phenomena. He is an editorial board member of *IEEE Computer Graphics and Applications* and has served as a reviewer and committee member for various computer graphics, computer vision, machine learning, and robotics conferences and journals, including ACM SIGGRAPH, Eurographics, CVPR, ECCV, NeuRIPS, ICLR, ICML, and IROS.

Nobuyuki Umetani (http://www.nobuyuki-umetani.com/) is an Associate Professor with the University of Tokyo. Previously, he was a Research Scientist with Autodesk Research, leading the Design and Fabrication Group. Before that, he was a postdoctoral researcher with Autodesk Research and Disney Research Zurich. He received

the Ph.D. degree from The University of Tokyo under the supervision of Takeo Igarashi in 2012. He received the Microsoft Research Asia fellowship in 2011 and AsiaGraphics Young Researcher Award in 2018. The principal research question he addresses through his studies is: how to integrate real-time physical simulation into an interactive geometric modeling procedure to facilitate creativity. He is broadly interested in physics simulation, especially the finite element method, applied for computer animation, biomechanics, and mechanical engineering.

Welcome to the IEEE CG&A family!