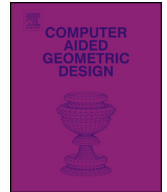




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Computer Aided Geometric Design

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Editorial

Special Issue on the 12th International Conference on Geometric Modeling and Processing (GMP 2018)



The International Conference on Geometric Modeling and Processing (GMP) is an annual conference series that has brought together world leading researchers and practitioners in geometric modeling, simulation, and computing since its inauguration in Hong Kong in 2000. The modeling and processing of geometric data is fundamental to many applications, including computer graphics, computer vision, computer aided design and manufacturing, medical imaging, engineering analysis, robotics, additive manufacturing, and robotics. GMP conferences provide researchers and practitioners with a forum for exchanging new ideas, discussing new applications, and presenting new solutions. Previous GMP conferences were held in Xiamen (2017), San Antonio (2016), Lugano (2015), Singapore (2014), Huangshan (2012), Castro Urdiales (2010), Hangzhou (2008), Pittsburgh (2006), Beijing (2004), Tokyo (2002), and Hong Kong (2000).

The papers in this special issue of *Computer Aided Geometric Design* were presented at the 12th GMP Conference in the beautiful city of Aachen, Germany from April 9–11, 2018. The call for papers attracted a total of 104 submissions. Submitted papers were double-blind reviewed by at least three members of the program committee and underwent a two-stage reviewing process. Based on the recommendation of the reviewers, 26 papers were selected for presentation at the conference and for publication in this issue, and an additional 5 papers were invited to be revised and resubmitted to a regular issue of *Computer Aided Geometric Design*. The papers in this special issue were organized into eight dedicated sessions at the conference, specifically geometric modeling, surface and volume parametrization, B-spline and Bernstein–Bézier representations, adaptive and innovative spline representations, shape and point cloud analysis, isogeometric analysis, manufacturing and fabrication-aware design, and three-dimensional printing. The conference also featured four keynote lectures, including “Active Modeling through Pro-active Sensing” by Baoquan Chen, “Beneath the Surface: Volumetric Geometry Processing from Boundary Representations” by Justin Solomon, “Analysis-Suitable CAD and Isogeometric Analysis” by Michael Scott, and “Fusing Computation and Advanced Manufacturing” by Bernd Bickel. Finally, the conference featured an invited paper from *Computer Aided Geometric Design* and two invited papers from the *IEEE Transactions on Visualization and Computer Graphics*.

For the second consecutive year, Elsevier and *Computer Aided Geometric Design* sponsored a Best Paper Award contest, and authors of award-winning papers received a certificate and \$200 USD prize. The 2018 Best Paper Award winners were Yunku Kang for his paper “Fast and Robust Hausdorff Distance Computations from Triangle Mesh to Quad Mesh in Near-Zero Cases”, István Kovács for his paper “P-Bézier and P-Bspline Curves – New Representations with Proximity Control”, and Jochen Hinz for his paper “Elliptic Grid Generation Techniques in the Framework of Isogeometric Analysis Applications”. Each of these papers are included in this special issue. We extend our congratulations to each of the Best Paper Award winners, and we thank Elsevier for their financial support of the contest and the award committee for their efforts in reviewing each of the submissions.

We extend our sincere thanks to all of the authors and international program committee members whose collective effort has produced this outstanding compilation of works on geometric modeling and processing. We are also deeply grateful to the conference co-chairs Leif Kobbelt, Scott Schaefer, and Hiromasa Suzuki for their constant and much appreciated support and advice, and we thank Stefanie Behnke for providing assistance with the reviewing system. Special thanks are due to Rida T. Farouki and Konrad Polthier, the Editors-in-Chief of *Computer Aided Geometric Design*, and to Suganya Dorai, Qian Jiao, and the entire Elsevier support team for the production of this special volume. Last, but not least, we thank RWTH Aachen University for hosting the conference.



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