Special Issue on Computational Design and Fabrication Meet Computer Graphics

Final submissions due: 1 September 2016  ■  Publication date: May/June 2017

Computer graphics research is seeing growing interests in high-level analysis and processing of geometric objects, focusing more on the structure, semantics, and even functionalities of the objects rather than their geometric details. By acquiring a structural or functional understanding of 3D shapes, researchers are compelled to look into mid- to high-level design problems where human efforts can be substituted or at least relieved by machine computations. In parallel, with the rapid advances in 3D printing technologies in manufacturing domains, many design problems studied by researchers and practitioners are catering to the needs and constraints arising from physical fabrication. The intricate connections between design and fabrication, along with strong interests from both graphics researchers and the industry in developing computational approaches to both problems, provide the motivation for this special issue in "IEEE CG&A".

For this special issue, we are soliciting original contributions from the computer graphics and, more generally, visual computing communities that address real-world problems related to the computational design and fabrication of 3D objects.

Topics of interests include, but are not limited to, the following:

- Creative shape modeling and design
- Design space exploration
- Novel human-machine interfaces for design and fabrication
- Inverse problems in design and modeling
- Functionality-aware shape modeling and analysis
- Model acquisition for digital fabrication
- Multicolor and multimaterial fabrication
- Data collection and benchmarking for design and fabrication problems

Guest Editors
Please direct any correspondence before submission to the guest editors:

- Bedrich Benes (bbenes@purdue.edu), Purdue University
- David Kasik (david.j.kasik@boeing.com), Boeing
- Wilmot Li (wilmotli@adobe.com), Adobe Research
- Richard Zhang (haoz@cs.sfu.ca), Simon Fraser University

Submission Guidelines
Nondepartment articles submitted to "IEEE CG&A" should not exceed 8,000 words, including the main text, abstract, keywords, bibliography, biographies, and table text, where a page is approximately 800 words. Articles should include no more than 10 figures or images. Each 1/4 page figure, image, and table counts for approx. 200 words. Note that all tables, images, and illustrations must be appropriately scaled and legible; larger elements should be accounted for accordingly with respect to word count. Please limit the number of references to the most relevant and ensure to delineate your work from relevant past articles in "CG&A". Furthermore, avoid an excessive number of references to published work that might only be marginally relevant. Consider instead providing such pertinent background material in sidebars for non-expert readers. Visit the "CG&A" style and length guidelines at www.computer.org/web/peer-review/magazines. We also strongly encourage you to submit multimedia (videos, podcasts, and so on) to enhance your article. Visit the "CG&A" supplemental guidelines at www.computer.org/web/peer-review/magazines.

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