Themenliste für das Seminar Computergrafik, Wintersemester 2019/20

Modelling of vegetation

1.
Interactive authoring of simulation-ready plants
Yili Zhao, Jernej Barbič
ACM Transactions on Graphics (TOG), Volume 32, Issue 4 (July 2013), Article No. 84
Paper: http://dl.acm.org/citation.cfm?id=2461961&picked=formats
Paper webpage: http://run.usc.edu/botanical/

2.
Modeling and generating moving trees from video
Chuan Li, Oliver Deussen, Yizhe Song, Phil Willis, Peter Hall
ACM Transactions on Graphics (TOG), Volume 30, Issue 6 (December 2011), Article No. 127
http://dl.acm.org/citation.cfm?id=2024161
http://www.cs.bath.ac.uk/~cl249/

3.
Tree growth modelling constrained by growth equations
Yi, L., Li, H., Guo, J., Deussen, O., & Zhang, X.
Computer Graphics Forum, vol. 37 (2018), No. 1, pp. 239-253.
https://onlinelibrary.wiley.com/doi/pdf/10.1111/cgf.13263

4.
Creative virtual tree modeling through hierarchical topology-preserving blending
Wang, Y., Xue, X., Jin, X., & Deng, Z.
IEEE Transactions on Visualization and Computer Graphics, vol. 23 (2017), no. 12, 2521-2534.
https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7775115

5.
Topologically consistent leafy tree morphing
Wang, Y., Wang, L., Deng, Z., & Jin, X.
Computer Animation and Virtual Worlds, vol. 28 (2017), no. 3-4, e1761.
https://onlinelibrary.wiley.com/doi/pdf/10.1002/cav.1761

6.
Sketch-based shape-preserving tree animations
Wang, Y., Wang, L., Deng, Z., & Jin, X.
Computer Animation and Virtual Worlds, vol. 29 (2018), no. 3-4, e1821.
https://onlinelibrary.wiley.com/doi/pdf/10.1002/cav.1821

7.
Deformation grammars: Hierachical constraint preservation under deformation
Ulysse Vimont, Damien Rohmer, Antoine Begault, Marie-Paule Cani
Computer Graphics Forum (2017), doi:10.1111/cgf.13090
https://hal.inria.fr/hal-01518534/document

8.
Reconstruction of single tree with leaves based on terrestrial LiDAR point cloud data
Xie, D., Wang, X., Qi, J., Chen, Y., Mu, X., Zhang, W., & Yan, G.
Remote Sensing, vol. 10 (2018), no. 5.
https://res.mdpi.com/remotesensing/remotesensing-10-00686/article_deploy/remotesensing-10-00686.pdf?filename=&attachment=1

9.
A real-time 3D visualization approach for the appearance of crop leaves
Teng Miao, Xinyu Guo, Boxiang Xiao, Chunjiang Wang, Weiliang Wen
Bangladesh J. Bot. 45 (4) (2016), 895-904.
http://www.bdbotsociety.org/journal/journal_issue/2016%20September%20Supplementary/20.pdf

Modelling of landscapes

10.
Designer worlds: Procedural generation of infinite terrain from real-world elevation data
Ian Parberry
Journal of Computer Graphics Techniques, 3 (2014), no. 1, 74-85.
http://www.jcgt.org/published/0003/01/04/paper.pdf

Modelling of architecture

11.
View-dependent realtime rendering of procedural facades with high geometric detail
Lars Krecklau, Janis Born, Leif Kobbelt
In: I. Navazo, P. Poulin (eds.): EUROGRAPHICS 2013. *Computer Graphics Forum*, vol. 32 (2013), no. 2.
https://www.graphics.rwth-aachen.de/media/papers/krecklau_2013_eg.pdf

12.
Procedural modeling of buildings
Pascal Müller, Peter Wonka, Simon Haegler, Andreas Ulmer, Luc Van Gool
ACM Transactions on Graphics (TOG) - Proceedings of ACM SIGGRAPH 2006, vol. 25 (3) (July 2006), 614-623.
http://delivery.acm.org/10.1145/1150000/1141931/p614-muller.pdf?ip=134.76.192.140&id=1141931&acc=ACTIVE%20SERVICE&key=2BA2C432AB83DA15%2E8C14E74AF280C121%2E4D4702B0C3E38B35%2E4D4702B0C3E38B35&CFID=818083293&CFTOKEN=30151722&__acm__=1507713725_8ec3be5eed854549bc1f00329f2c34ea

Surface modelling

13.
Type-constrained direct fitting of quadric surfaces
James Andrews, Carlo H. Séquin
Computer-Aided Design & Applications, 10(a) (2013).
http://graphics.berkeley.edu/papers/Andrews-TCD-2013-06/Andrews-TCD-2013-06.pdf

Collision detection

14.
Efficient exact collision detection between ellipsoids and superquadrics via closed-form Minkowski sums
Sipu Ruan, Karen L. Poblete, Yingke Li, Qian Lin, Qianli Ma, Gregory S. Chirikjian
In: 2019 International Conference on Robotics and Automation (ICRA), Montréal, Canada, May 20-24, 2019, pp. 1765-1771.
https://ieeexplore.ieee.org/abstract/document/8793496

Volume modelling

15.
A ray-box intersection algorithm and efficient dynamic voxel rendering
Alexander Majercik, Cyril Crassin, Peter Shirley, Morgan McGuire
Journal of Computer Graphics Techniques Vol. 7, No. 3, 2018, pp. 66-82.
http://jcgt.org/published/0007/03/04/paper.pdf

16.
Robust and efficient photo-consistency estimation for volumetric 3D reconstruction
Alexander Hornung, Leif Kobbelt
In: A. Leonardis, H. Bischof, A. Pinz (eds.): ECCV 2006, Part II. *Lecture Notes in Computer Science* 3952 (2006), 179-190.
https://www.graphics.rwth-aachen.de/media/papers/hornung2006eccv_041.pdf

Illumination

17.
Fast ray-triangle intersections by coordinate transformation
Doug Baldwin, Michael Weber
Journal of Computer Graphics Techniques, vol. 5 (2016), no. 3, 39-49.
http://www.jcgt.org/published/0005/03/03/paper.pdf

18.
Direct ray tracing of full-featured subdivision surfaces with Bézier clipping
Takahito Tejima, Masahiro Fujita, Toru Matsuoka
Journal of Computer Graphics Techniques, vol. 4 (2015), no. 1, 69-83
http://www.jcgt.org/published/0004/01/04/paper.pdf

Rewriting techniques

19.
A fast and reliable hybrid approach for inferring L-systems
Jason Bernard, Ian McQuillan
In: Artificial Life Conference Proceedings. MIT Press, 2018. pp. 444-451.
https://www.mitpressjournals.org/doi/pdf/10.1162/isal_a_00083

20.
Supporting feature-based parametric modeling by graph rewriting
S. Vilgertshofer, A. Borrmann
In: 35th Internat. Symposium on Automation and Robotics in Construction (ISARC 2018).
https://publications.cms.bgu.tum.de/2018_vilgertshofer_isarc.pdf

Graph visualization

21.
Multi-level tree based approach for interactive graph visualization with semantic zoom
Felice De Luca, Iqbal Hossein, Stephen Kobourov, Katy Börner
arXiv: document 1906.05996 (cs:CG), 14 June 2019.
https://arxiv.org/pdf/1906.05996.pdf