

Themenliste / List of topics, Seminar Computergrafik, Winter 2021/22

Modelling of vegetation

1.

Yili Zhao, Jernej Barbič (2013):

Interactive authoring of simulation-ready plants.

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.

Yi, L., Li, H., Guo, J., Deussen, O., & Zhang, X. (2018):

Tree growth modelling constrained by growth equations.

Computer Graphics Forum, vol. 37, no. 1, 239-253.

<https://onlinelibrary.wiley.com/doi/pdf/10.1111/cgf.13263>

3.

Qin, X., Nakamae, E., Tadamura, K., & Nagai, Y. (2003):

Fast photo-realistic rendering of trees in daylight.

Computer Graphics Forum, 22 (3), 243-252.

<https://pdfslide.net/download/link/fast-photo-realistic-rendering-of-trees-in-daylight>

4. - **Thema vergeben** -

Jurado, J. M., Cárdenas, J. L., Ogáyar, C., Ortega, L., & Feito-Higueruela, F. R. (2019):

Accurate plant modeling based on the real light incidence.

VISIGRAPP (1. GRAPP), pp. 360-366.

<https://www.scitepress.org/Papers/2019/76868/76868.pdf>

5.

Wang, Y., Xue, X., Jin, X., & Deng, Z. (2017):

Creative virtual tree modeling through hierarchical topology-preserving blending.

IEEE Transactions on Visualization and Computer Graphics, vol. 23, no. 12, 2521-2534.

<https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=7775115>

6.

Ulysse Vimont, Damien Rohmer, Antoine Begault, Marie-Paule Cani (2017):

Deformation grammars: Hierarchical constraint preservation under deformation.

Computer Graphics Forum (2017), vol. 36, no. 8, pp. 429-443. doi:10.1111/cgf.13090.

<https://hal.inria.fr/hal-01518534/document>

7.

Xie, D., Wang, X., Qi, J., Chen, Y., Mu, X., Zhang, W., & Yan, G. (2018):

Reconstruction of single tree with leaves based on terrestrial LiDAR point cloud data.

Remote Sensing, vol. 10, no. 5.

https://res.mdpi.com/remotesensing/remotesensing-10-00686/article_deploy/remotesensing-10-00686.pdf?filename=&attachment=1

Modelling of architecture

8.

Lars Krecklau, Janis Born, Leif Kobbelt (2013):

View-dependent realtime rendering of procedural facades with high geometric detail.

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

Surface modelling

9.

James Andrews, Carlo H. Séquin (2013):

Type-constrained direct fitting of quadric surfaces.

Computer-Aided Design and Applications, 11 (1), 107-119.

<http://graphics.berkeley.edu/papers/Andrews-TCD-2013-06/Andrews-TCD-2013-06.pdf>

Volume modelling

10.

Ströter, D., Mueller-Roemer, J., Stork, A., & Fellner, D. W. (2020):

OLBVH: octree linear bounding volume hierarchy for volumetric meshes.

The Visual Computer, 36 (10), 2327-2340.

https://www.igd.fraunhofer.de/sites/default/files/media/biblio/2020/2020_stroeter_olbvh.pdf

Object reconstruction

11. - **Thema vergeben** -

Hassnae, R., & Mohammed, S. (2019):

3D object reconstruction from 3D point cloud by supershapes using PSO.

Journal of Theoretical and Applied Information Technology, 97 (24).

<https://pdfs.semanticscholar.org/00ab/36d175aa7fc37c08cdd67442339abefb3e30.pdf>

Raytracing

12.

Doug Baldwin, Michael Weber (2016):

Fast ray-triangle intersections by coordinate transformation.

Journal of Computer Graphics Techniques, vol. 5, no. 3, 39-49.

<http://www.jcgt.org/published/0005/03/03/paper.pdf>

13.

Abert, O., Geimer, M., & Muller, S. (2006):

Direct and fast ray tracing of NURBS surfaces.

2006 IEEE Symposium on Interactive Ray Tracing, pp. 161-168.

https://www.researchgate.net/profile/Oliver_Abert/publication/232644373_Direct_and_fast_ray_tracing_of_NURBS_surfaces/links/0c960522794d82df36000000/Direct-and-fast-ray-tracing-of-NURBS-surfaces.pdf

Natural phenomena

14. - Thema vergeben -

Jensen, H., Durand, F., Dorsey, J., Stark, M., Shirley, P., & Premoze, S. (2001):

A physically-based night sky model.

In: Proceedings of the 28th annual conference on computer graphics and interactive techniques, pp. 399-408.

<http://graphics.stanford.edu/~henrik/papers/nightsky/nightsky.pdf>

15.

Giroud, A., & Biri, V. (2010):

Modeling and rendering heterogeneous fog in real-time using B-spline wavelets.

archives-ouvertes.fr.

<https://hal-upec-upem.archives-ouvertes.fr/hal-00681748/file/GB10.pdf>

16.

Favorskaya, M. N., & Tkacheva, A. (2013):

Rendering of wind effects in 3D landscape scenes.

Procedia Computer Science, 22, 1229-1238.

<https://www.sciencedirect.com/science/article/pii/S187705091301003X/pdf?md5=a15d78253d23887feec72dc80df810d8&pid=1-s2.0-S187705091301003X-main.pdf>

17.

Ihmsen, M., Orthmann, J., Solenthaler, B., Kolb, A., & Teschner, M. (2014):

SPH Fluids in Computer Graphics.

In: Eurographics 2014 - State of the Art Reports.

https://cg.informatik.uni-freiburg.de/publications/2014_EG_SPH_STAR.pdf

18. - Thema vergeben -

Pegoraro, V., & Parker, S. (2006):

Physically-based realistic fire rendering.

NPH 2006, pp. 51-59.

<http://www.sci.utah.edu/publications/vpegorar06/PhysicallyBasedRealisticFireRendering.pdf>

Image completion

19. - Thema vergeben -

Huang, H., Yin, K., Gong, M., Lischinski, D., Cohen-Or, D., Ascher, U., & Chen, B. (2013):

"Mind the gap": tele-registration for structure-driven image completion.

ACM Trans. Graph., 32, 174:1-174:10.

<http://www.cs.tau.ac.il/~dcor/articles/2013/Mind-the-Gap.pdf>

Rewriting techniques

20.

Jason Bernard, Ian McQuillan (2018):

A fast and reliable hybrid approach for inferring L-systems.

In: Artificial Life Conference Proceedings. MIT Press, 2018. pp. 444-451.

https://www.mitpressjournals.org/doi/pdf/10.1162/isal_a_00083

21.

S. Vilgertshofer, A. Borrmann (2018):

Supporting feature-based parametric modeling by graph rewriting.

In: 35th Internat. Symposium on Automation and Robotics in Construction (ISARC 2018).

https://publications.cms.bgu.tum.de/2018_vilgertshofer_isarc.pdf

Diverse other topics

22. - **Thema vergeben** -

Lambru, Christian, et al. (2021): **Comparative Analysis of Real-Time Global Illumination Techniques in Current Game Engines.** DOI:10.1109/ACCESS.2021.3109663.

<https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9527241> (September 2021)

23.

Battacharya, Sukriti, et al. (2021): **An Efficient 2.5D Shadow Detection Algorithm for Urban Planning and Design Using a Tensor Based Approach.**

DOI:10.3390/ijgi10090583

<https://www.mdpi.com/2220-9964/10/9/583/htm>

(August 2021)

24.

Askar, Shavan, et al. (2021): **Deep Learning and Fog Computing: A Review.**

DOI:10.5281/zenodo.5222647

<https://zenodo.org/record/5222647#.YXLDA-dCSUk> (August 2021)

25.

Goswami, Prashant (2021): **A survey of modeling, rendering and animation of clouds in computer graphics**

DOI:10.1007/s00371-020-01953-y

<https://link.springer.com/content/pdf/10.1007/s00371-020-01953-y.pdf>

(Juli 2021)