

Themenliste / list of topics, Seminar Computergrafik, Winter 2025/2026

3D data acquisition and analysis

1.

Morales, Aidan & MacFarlane, David W. (2025):

Reducing tree volume overestimation in quantitative structure models using modeled branch topology and direct twig measurements.

Forestry 98, 394-409.

<https://academic.oup.com/forestry/article/98/3/394/7801610>

2.

Hackenberg, Jan & Bontemps, Jean-Daniel (2023):

Improving quantitative structure models with filters based on allometric scaling theory.

Applied Geomatics 15, 1019-1029.

<https://link.springer.com/article/10.1007/s12518-023-00537-4>

3.

Ferraro, Pascal & Godin, Christophe (2000):

A distance measure between plant architectures.

Annals of Forest Science 57, 445-461.

<https://www.afs-journal.org/articles/forest/pdf/2000/05/f0504.pdf>

4.

Boudon, Frédéric; Preuksakarn, Chakkrit; Ferraro, Pascal; Diener, Julian; Nacry, Philippe; Nikinmaa, Eero & Godin, Christophe (2014):

Quantitative assessment of automatic reconstructions of branching systems obtained from laser scanning.

Annals of Botany 114, 853-862.

<https://academic.oup.com/aob/article/114/4/853/2769023>

Rendering point clouds

5.

Wegen, Ole; Scheibel, Willy; Trapp, Matthias; Richter, Rico & Döllner, Jürgen (2024):

A survey on non-photorealistic rendering approaches for point cloud visualization.

IEEE Transactions on Visualization and Computer Graphics (2024), 1-20.

[https://www.researchgate.net/profile/Ole-](https://www.researchgate.net/profile/Ole-Wegen/publication/380937598/inline/jsViewer/6656d7040b0d28457461c8b6?pdfJsDownload=1)

[Wegen/publication/380937598/inline/jsViewer/6656d7040b0d28457461c8b6?pdfJsDownload=1](https://www.researchgate.net/profile/Ole-Wegen/publication/380937598/inline/jsViewer/6656d7040b0d28457461c8b6?pdfJsDownload=1)

Modelling of vegetation

6.

Bernard, Jason & McQuillan, Ian (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

7.

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>

8.

Hu, Chengsong; Thomasson, J. Alex; Reberg-Horton, Chris; Mirsky, Steven B. & Bagavathiannan, Muthukumar V. (2022):
Modeling realistic 3D agricultural vegetations using photometric-based approach and its application to weed detection.
Computers and Electronics in Agriculture 198, 107020.
<https://papers.ssrn.com/sol3/Delivery.cfm/ed5f7ca9-fa02-429b-995d-9b4811361e54-MECA.pdf?abstractid=4001357&mirid=1>

Interactive techniques

9.

Dunk, Andrew; Haffegge, Adrian & Alexandrov, Vassil (2012):
Selection methods for interactive creation and management of objects in 3D immersive environments.
Procedia Computer Science 1, 2609-2617.
<https://www.sciencedirect.com/science/article/pii/S1877050910002954>

10.

zman & miloszmaki (2012):
Zoom to screen space selection box in 3D.
Online forum *stackoverflow.com*,
<https://stackoverflow.com/questions/10545537/zoom-to-screen-space-selection-box-in-3d>