Your tasks

1. Select 3 papers in decreasing priority. Send email to westermann@tum.de with your name, student id and selections until 18.4.2025.

2. Read and understand the assigned paper
   You can use chatgpt and/or deepseek with specific prompting, e.g.,

   "Summarize the paper in plain language."
   "Summarize the paper section by section."
   "What is the research problem this paper addresses, and why is it important?"
   "Explain the key contributions in bullet points."

   "Explain the method/model in detail, step by step."
   "Can you walk me through the mathematical formulation?"
   "Break down Figure X and describe what it's showing."
   "What do the experimental results mean?"

   "why is the method important"
   "how does the method advance the state of the art"

   "Define all technical terms used in this paragraph."
   "Rewrite this paragraph in clearer language."

   Check whether LLMs have considered all specific contributions, if not, either refine prompts or do manually.

   Summarize the proposed method in 1 page.

3. Write down a 1 page critical assessment, i.e., explain precisely which problem is addressed, why the problem is relevant, why it needs another method, what did previous methods do, does the current method advances the state of the art and how is it measured. Note: The critical assessment is NOT a summary of the method.

4. Generate a quiz asking specific questions about the paper's content. The quiz should be given to graduate students to check whether they have understood the method and the underlying principles.

5. Prepare a presentation which showcases the method to the other students. Use the critical assessment from 3. to structure your presentation. Note: you should not have more than 15 slides, you should not use a fix slide template, you should have a convincing design, you should not have any equation on your slides, you should not have any sentence with more than 4 words on your slides. You should have a live demonstration at the end of your talk, if none is available for the method you present, look for something similar.

6. Be critical opponent: you will be assigned 2 additional papers from those that have been assigned to others. For these 2 papers, use your brain and/or chatgpt/deepseek to critically assess the proposed methods, i.e., find out weaknesses etc. Prepare 2 questions on each paper which you will ask the presenter at the end of his/her presentation.

HPG2024 https://www.highperformancegraphics.org/2024/program/index.html

Real-Time Decompression and Rasterization of Massive Point Clouds

Rahul Goel, Markus Schütz, Bernhard Kerbl, P. J. Narayanan

GigaVoxels DP: Starvation-less asynchronous render and production for large and detailed

volumetric scenes walkthrough

Antoine Richermoz, Fabrice Neyret

H-PLOC Hierarchical Parallel Locally-Ordered Clustering for Bounding Volume Hierarchy Construction

Carsten Benthin, Daniel Meister, Joshua Barczak, Rohan Mehalwal, John Tsakok, Andrew Kensler

SAH-Optimized k-DOP Hierarchies for Ray Tracing

Martin Káčerik, Jiří Bittner

Concurrent Binary Trees for Large-Scale Game Components

Anis Benyoub, Jonathan Dupuy

Hybrid Voxel Formats for Efficient Ray Tracing

Russel Arbore, Jeffrey Liu, Aidan Wefel, Steven Gao, Eric Shaffer

SIGGRAPH 2024 https://kesen.realtimerendering.com/sig2024.html

Cyclogenesis: Simulating Hurricanes and Tornadoes

Jorge Alejandro Amador Herrera, Jonathan Klein, Daoming Liu (KAUST), Wojtek Palubicki (Adam Mickiewicz University), Soren Pirk (Christian-Albrechts-University (CAU)), Dominik Michels (KAUST)

From microfacets to participating media: A unified theory of light transport with stochastic geometry

Dario Seyb (Dartmouth College), Eugene d'Eon, Benedikt Bitterli (NVIDIA), Wojciech Jarosz (Dartmouth College)

Neural Slicer for Multi-Axis 3D Printing

Tao Liu*, Tianyu Zhang*, Yongxue Chen, Yuming Huang Charlie C.L. Wang (The University of Manchester) *Joint first authors

Real-Time Path Guiding Using Bounding Voxel Sampling

Haolin Lu, Wesley Chang, Trevor Hedstrom, Tzu-Mao Li (University of California, San Diego)

Mob-FGSR: Frame Generation and Super Resolution for Mobile Real-Time Rendering

Sipeng Yang, Qingchuan Zhu, Junhao Zhuge (Zhejiang University), Qiang Qiu, Chen Li, Yuzhong Yan, Huihui Xu (OPPO US Research Center), Ling-Qi Yan (University of California, Santa Barbara), Xiaogang Jin (Zhejiang University)

Neural Geometry Fields For Meshes

Venkataram Sivaram, Ravi Ramamoorthi, Tzu-Mao Li (University of California, San Diego)

N-BVH: Neural ray queries with bounding volume hierarchies

Philippe Weier, Alexander Rath (DFKI and Saarland University), Elie Michel, Iliyan Georgiev (Adobe), Philipp Slusallek (DFKI and Saarland University), Tamy Boubekeur (Adobe)

Neural Bounding

Stephanie Wenxin Liu (Birkbeck, University of London), Michael Fischer (University College London), Paul D. Yoo (Birkbeck, University of London), Tobias Ritschel (University College London)