MORITZ GRAUER

Karlsruhe, Germany
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vexury.dev

Rendering engineer with a passion for games. Specialized in ray tracing optimization, cache-efficient algorithms, and real-time graphics systems.

TECHNICAL SKILLS

Graphics Programming
APIs: Vulkan, OpenGL
Rendering: Ray/Path Tracing, Monte Carlo Methods, MLT, Photon Mapping, Real-time & Offline
Programming
C, C++, GLSL, CUDA, Python, Java, C#
Tools & Engines
Git, ImGUI, GLFW, Unity Engine, Unreal Engine, Blender

EXPERIENCE

Computer Graphics Researcher
Feb 2022 – Apr 2026
Karlsruhe Institute of Technology (KIT)

- Published research on ray tracing memory optimization
- Developed custom rendering engine with ray/path tracing support
- Supervised Bachelor/Master theses and organized Computer Graphics lectures/exercises

QA Engineer
Oct 2020 – Sep 2021
Gameforge (Internship + Working Student)

- Tested gameplay functionality and quest systems across multiple MMO titles
- Debugged and verified in-game rewards, progression systems, and content updates
- Collaborated with dev teams on quality standards and bug resolution

Programming Tutor
Oct 2016 – Jul 2019
Karlsruhe Institute of Technology (KIT)

- Mentored CS students in programming and algorithms

PROJECTS

Custom Graphics Engine – VexEngine
(github.com/Vexury/VexEngine)
A C++ graphics engine built from scratch — path tracing, Cook-Torrance GGX, dual OpenGL/Vulkan backend, BVH acceleration, full editor UI and more.

Global Game Jam 2026 – Quack 3
(globalgamejam.org/games/2026/quak-3-5)
Playable FPS merging 2D art with 3D gameplay. Built in Unity without third-party assets. Handcrafted art, SFX and shaders.

EDUCATION

M.Sc. Informatics
2018 – 2021
Karlsruhe Institute of Technology (KIT)
Specialization: Computer Graphics & AI

Exchange Semester
2018 – 2019
Chalmers University, Gothenburg, Sweden

B.Sc. Informatics
2015 – 2018
Karlsruhe Institute of Technology (KIT)

PUBLICATIONS

Minimizing Ray Tracing Memory Traffic through Quantized Structures and Ray Stream Tracing
(*https://arxiv.org/abs/2505.24653, 2025*)
Novel approach to reducing memory bandwidth in ray tracing through quantized BVH structures

HONORS

Studienstiftung des deutschen Volkes
German Academic Scholarship Foundation (2018 – 2021)

LANGUAGES

German: Native
English: Fluent (written & spoken)
French, Spanish, Swedish: Basic