

Joris Rijsdijk

📍 Dordrecht, Zuid-Holland ✉ j.a.rijsdijk@tudelft.nl 📞 06 15 27 38 59 🌐 jorisar.github.io/portfolio
🔗 JorisAR

Education

- TU Delft** Oct 2025 – Ongoing
PhD candidate at the Computer Graphics and Visualization group.
- Working on *Improving Radiance-Field Pipelines for Editable and Scalable Environments*.
 - Under supervision of Dr. R. Marroquim.
- TU Delft** Sept 2023 – July 2025
MSc Computer Science — Artificial Intelligence Technology Variant
- Cum Laude
 - Thesis Project: 9.0/10.0
 - Prioritized courses hosted by the Computer Graphics and Visualization group, with a 8.9/10 average for these courses.
- TU Delft** Sept 2020 – July 2023
BSc Computer Science and Engineering
- Thesis Project: 9.5/10.0

Experience

- Highschool Tutor** Dordrecht, ZH Sept 2020 – Jan 2022
TopTutors
- Taught physics, mathematics, and chemistry both privately and to small groups of students from VWO years 4-6.
- Highschool Tutor** Dordrecht, ZH Jan 2022 – Jan 2023
Insula College — H3O
- Taught physics, and chemistry to small groups of students from HAVO & VWO years 4-6.
- Student Assistant** Delft, ZH Sept 2023 – Nov 2024
Holonomy Project - Computer Graphics and Visualization group at TU Delft
- Optimized the performance of the virtual reality application to enable running it on a portable Quest headset, rather than requiring a powerful desktop computer.
 - Implemented a more immersive world, built using procedural generation.
 - Presented at several conferences and the science day in Delft.
- Teaching Assistant** Delft, ZH Sept 2024 – Nov 2024
3D Computer Graphics and Animation at TU Delft

Publications

- Sonifying motor skills with Pizzicato, a game for motor behavior research** Aug 2024
Martin Starkov, Scott Jochems, *Joris Rijsdijk*, Ravi Snellenberg, Luca Stoffels, Amir Zaidi, Rafael Bidarra
doi.org/10.1109/CoG60054.2024.10645594 [🔗](#)
- Holonomy: A Virtual Environment based on Hyperbolic Space** Sept 2024
Martin Skrodzki, Scott Jochems, *Joris Rijsdijk*, Ravi Snellenberg, Rafael Bidarra
dl.acm.org/doi/10.1145/3665318.3677149 [🔗](#)

Projects

All my public projects are listed [on my portfolio website](#) [↗](#). Here are some highlights:

Destructible Large-Scale Voxel Planets using Surface Nets: github.com/JorisAR/GDVoxelTerrain [↗](#)

- Developed a system that supports large voxel volumes based on signed distances fields using an octree.
- The surface can be efficiently modified in real-time, as the surface is sectioned into 3D chunks, based on the position of the camera.
- Implemented level of detail to support large viewing distances, by storing lower frequency representations of the voxel data in the octree also, and stitching different levels together at the boundaries.
- Tools Used: C++ (incl. multi-threading), Godot for rendering and physics

Ray-Marched Voxel Simulation: github.com/JorisAR/GDVoxelPlayground [↗](#)

- Developed a dynamic environment that is brought to life using principles from cellular automata.
- Implemented brick based voxel ray-marching on top of the Amanatides and Woo algorithm to visualize the voxel-grid extremely efficiently.
- Tools Used: C++, GLSL, Godot as an abstraction layer to work with Vulkan compute shaders.

Software Path Tracing: github.com/JorisAR/GDPathTracing [↗](#)

- Developed a path tracer for the Godot game engine, to visualize scenes in higher visual fidelity.
- Implemented basic specular and diffuse importance sampling, textures, and surface properties such as roughness, metalness and emission.
- Implemented BVH trees to efficiently perform raycasts in the scene on the GPU. By splitting the tree into top and bottom levels, multiple instances of the same mesh only need to be stored once, and model transformations are trivialized.
- The project was featured in the [April 2025 edition of the official Godot newsletter](#) [↗](#).
- Tools Used: C++, GLSL, Godot as an abstraction layer to work with Vulkan compute shaders.

Technologies

Skills: GPGPU programming

Languages: C++, GLSL, C#, Python, JavaScript

Technologies: .NET, CUDA, OpenGL, Vulkan, PyTorch, Unity, Godot

Hobbies

Outside of work and computer graphics, I enjoy:

- Playing musical instruments, including piano, guitar, drums, and saxophone.
- Baking artisanal bread and pizza.
- Swimming, running and hiking.