TOBIAS BRANDNER

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AI-Focused Software Engineer with a background in C++, Python, and Real-Time Rendering
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PROFILE

Computer Science graduate focused on Machine Learning, Real-Time Rendering, and Software Architecture. Hands-on experience with C++, Python, Unreal Engine, and academic research. Currently seeking opportunities in AI or systems development while sharpening technical and soft skills through coaching and self-directed learning.

SKILLS

Languages:	Python, C++, C#, Java, Rust
Frameworks/Technologies:	PyTorch, NumPy, OpenCV, Matplotlib, Pandas, OpenGL
Tools:	Git, CMake, Blender
Game Engines:	Unreal, Unity, Godot
Languages:	German (C2), English (C1)

WORK EXPERIENCE

Scientific Assistant – C# Developer University of Würzburg, 11/2021 – 08/2023

- Worked on VIA-VR, a VR-based medical application editor in Unity.
- Developed importers for 3D scene data (JSON) from Mozilla Spoke.

Teaching Assistant – C++ Tutor University of Würzburg, 08/2020 – 08/2023

- Supervised GameLab III, teaching game engine development with C++ and OpenGL.
- Extended GitLab codebase and maintained documentation.

Intern – C# Developer Gentle Troll Entertainment GmbH, 04/2020 – 07/2020

- Contributed game mechanics with C# to a Unity-based serious game in an agile Scrum team.

PROJECTS

Neural Rendering – Real-Time Super Resolution 01/2024 – 09/2024

- Developed a neural network to improve resolution and reduce artifacts in real-time rendering.
- Created a 500 GB dataset in Unreal Engine 5; implemented CNN, U-Net, and ViT in PyTorch.

Generative Rendering (Experimental) 01/2025 – Present

- Exploring neural generative models as experimental substitutes for standard rendering pipelines.
- Designing a prototype merging symbolic rendering (ASCII) with neural post-processing layers.

EDUCATION

M.Sc. Computer Science (AI Focus) University of Würzburg, 04/2021 – 09/2024
Grade: 1.5 | Thesis: Real-Time Rendering Super Resolution with Unreal Engine 5
Relevant Courses: NLP, Computer Vision, Computational Geometry

B.Sc. Games Engineering University of Würzburg, 10/2017 – 09/2021
Grade: 1.8 | Thesis: Crowdsourced Help Facility Design and Management for Authoring Platforms