JULIAN **HEINKEN**

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EDUCATION ──────────────────────────────

Hamburg University of Applied Sciences | *BASc Media Systems*   **2016-2021**
- Thesis: Texel-Space Rendering with the Oculus Quest

Wirtschaftsgymnasium Göhlbachtal   **Hamburg**
- Abitur   2014

EXPERIENCE ──────────────────────────────

Symmetry Break Studio GmbH   **Sep 2021 – Present**
Co-Founder and Technical Director   Hamburg, Germany
- Co-founded a limited liability company (GmbH) to create video games and tools.
- Implemented the 2D narrative game "Misgiven" in Unity. Build various custom technologies, such as a signed-distance-field UI framework and art direction-specific shaders.
- Worked on lighting and level beautification.
- Developed and released shader assets/tools for the Unity Asset Store.

Super Crowd GmbH   **Hamburg, Germany**
Graphics Programmer   Juli 2020 - March 2022
- Developed a novel approach to 2D-Isometric rendering without sorting. (Implicit sorting of sprites via depth-buffer and vertex displacement. Additional transparency via Alpha-To-Coverage)
- Built tools for level- and game designers to speed up their workflow and improve game performance.
- (For Threaks GmbH) Ported the custom Unity graphics pipeline for "All I Have Is Time" to the Universal Rendering Pipeline (URP).

VR Nerds GmbH   **Hamburg, Germany**
Unity Developer (Working Student)   July 2018 - Sept. 2018
- Created a specialized shader for VR and order-independent transparency.
- Worked on destruction effects and optimizations for the VR Game "Tower Tag".

Realities.io Inc.   **Berlin, Germany**
Graphics Programmer (Intern)   Feb 2018
- Implemented an AI-based image upscaler in Unreal Engine 4.
- Learned photogrammetry basics.

Lucid Trips Team   **Hamburg, Germany**
Unity Developer   June 2015 - Oct 2017
- Developed a tool to split the designer-created world mesh into smaller chunks. (This enabled the use of light-mapping and vastly more efficient occlusion culling.)
- Implemented a post effect that reduces nausea in VR, by limiting the visible area on abrupt player avatar movement.
- Implemented effects, such as cross-session persistent footprints and visible movement trails, and customized third-party shader code to project needs.

Freelancing work   **Hamburg/Remote, Germany**
      Since 2017
- Supported porting a "Battle Planet - Judgment Day" to PlayStation 4 and Switch.
- Technical Art consulting for indie games.
- Unity and Unreal development for games and VR installations.

SKILLS

Programming languages C# (advanced), C++ (intermediate), Rust (intermediate), C (intermediate), Python (basics), JavaScript (basics), Zig (basics)

Developer Tools Visual Studio, Rider, RenderDoc, NSight, Git, SVN

Art Tools Photoshop, GIMP, Houdini, EmberGen, Substance 3D Designer

Language German (mother language), English (fluent), Spanish (basic), Japanese (basic)

Interests Bouldering, Music (drums, synthesizers, DAWs).

PROJECTS

Misgiven | *Steam Page*   TBA
- Narrative 2D-Game with a unique dialogue system, made in Unity.
- Entire game logic, VFX and level lighting.
- Build a custom Signed-Distance-Field framework for UI animations.

Super Grass (Working title) (Unity Asset)   2024
- Very fast procedural grass shader for the Unity URP, rendering hundreds of thousands of grass blades in under 1 millisecond.

Screen Space God Rays (Unity Asset) | *Asset Store Page*   2024
- God Ray Shader for Unity with support for 3D, 2D and VR.
- In-depth shader optimizations for maximal performance.
- Level and lighting work for example scene.

Unnamed C++ Game Engine | *Demo Video*   2022+
- Second iteration of an hobby 2D-Engine on top of *Raylib* for PC and Web.
- Editor application with UI (via Dear ImGui), undo/redo, load/save, hierarchy and inspector window.
- Support for *Spine*, *Yarn Spinner* (limited, custom parser) and path finding.

All I Have Is Time (canceled) | *Project Page*   2022
- Ported the custom Unity graphics pipeline to the Universal Rendering Pipeline (URP).

Super Crowd Framework (discontinued) | *Project Page*   2020-2022
- Framework in Unity for WebGL-based online events during the pandemic.
- Used for: Indie Arena Booth 2021 & 2022, Dream Hack Beyond 2022, Hamburg Games Conference 2022 and many others.

Battle Planet - Judgment Day | *Steam Page*   2019
- Freelance work for Threaks as a Unity-Developer.
- Implemented achievement and leaderboard system for PlayStation 4 and Switch.
- Additional Tech-Art support.

Lufthansa Air Swing VR Experience| *Project Website*   2019
- Freelance work for Demodern as a Unity-Developer.
- Game Logic implementation.

Lucid Trips | *Steam Page*   2015-2017
- Open-world VR game with experimental locomotion controls.

CERTIFICATION & AWARDS

2023 (with Misgiven) Deutscher Entwicklerpreis 2023 - Best Newcomer (Nominated)

2020 (with Super Crowd) Deutscher Computerspiel Preis - Sonderpreis der Jury