

# JULIAN HEINKEN

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## EDUCATION

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**Hamburg University of Applied Sciences** | *BASc Media Systems* **2016-2021**

- Thesis: Texel-Space Rendering with the Oculus Quest

**Wirtschaftsgymnasium Göhlbachtal**

**Hamburg**

- Abitur

2014

## EXPERIENCE

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**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 level lighting and 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 Threacks 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

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**Programming languages** C#, C++, HLSL, Rust, C, Python, JavaScript.

**Engines & Frameworks** Unity, Unreal, Godot, Raylib, SDL, sokol-gfx, Bevy.

**Developer Tools** Visual Studio, Rider, RemedyBG, RenderDoc, NSight, Git, SVN.

**Art Tools** Photoshop, SideFX Houdini, EmberGen, Substance 3D Designer.

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

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

## PROJECTS

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**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 a 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.

**Lucid Trips** | [Steam Page](#)

2015-2017

- Open-world VR game with experimental locomotion controls.

## AWARDS

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2024 (with Misgiven) [DCP Award - Best Prototype \(Won\)](#)

2023 (with Misgiven) [DEP Award - Best Newcomer \(Nominated\)](#)

2020 (with Super Crowd) [DCP Award - Special Award Of The Jury \(Won\)](#)