

# Simon Philipp Haag

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## Simon Philipp Haag

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Computer science & media student from South Germany working towards his masters. Passionate about the intersection between artificial intelligence and digital media of all sorts, especially games & visual effects. Always up for new challenges and excited to work with and learn from experts in the industry.

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## Skills

- Programming Interactive Applications with C#, C++, Unreal Engine, & Unity
- Python, TensorFlow, Jupyter Notebooks for Data Mining & ML
- Interactive VR Applications (Steam VR & Oculus)
- Programming Embedded Systems in C (Atmega328p)
- Basics in Modelling, Shading & Lighting in Blender
- German (native), English (Level C1)

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## Projects

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### Redirected Walking in VR / Stuttgart Media University

This Project is based on the work presented by Sun et al. We implemented our version of a redirection algorithm in Unreal Engine 4, extending Unreals VR camera system to allow redirection. For gaze detection, we used the 7Invensun aGlass DK. We showed that redirected walking is a feasible locomotion method for room-scale VR in our test environment.

### Object Space Painterly Rendering / Stuttgart Media University

Based on the paper "Object-Space Painterly Rendering for WebGL" from A. Hanson, I implemented my version of a Painterly Rendering effect in Unity. Images can be interactively generated in a Painterly look with the implemented non-photorealistic rendering pipeline.

### Position-Based Dynamics / Stuttgart Media University

This project is an implementation of the paper of the same name by Matthias Müller et al. I implemented the project in Unity because of the possibility to quickly and easily edit geometries programmatically. I implemented all constraints described in the original paper (distance, bending, and volume constraints). I created the project as part of the lecture Game Play Physics.

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## Experience

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### Mackevision Medien Design GmbH / R&D Working Student

March 2020 - Today, Stuttgart, Germany

Candidate for Bachelors Degree. Research on synthetic data generation for computer vision tasks, with a focus on bridging the domain gap between real and synthetic data with domain adaptation methods.

Development of Computer Vision POCs & part of the development team for a framework for scalable and flexible data set generation of synthetic environments for sim-to-real-transfer in Unreal Engine 4.

### Mackevision Medien Design GmbH / Real-time Dev Internship & Working Student

September 2018 - February 2020, Stuttgart, Germany

Internship and working student in the field of real-time development.

Development of code modules, proof of concepts for product configurators, and virtual experiences in Unreal Engine & Unity. Working with large existing code base & versioning tools (Perforce & Git).

Collaboration with a multidisciplinary team in an agile environment.

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## Education

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### Stuttgart Media University / Computer Science and Media M.Sc

October 2020 - Today, Stuttgart

Deepening topics started in undergrad studies with a stronger focus on machine learning and computer graphics.

### Stuttgart Media University / Computer Science and Media B.Sc

October 2016 - August 2020, Stuttgart

Lectures and projects with a focus on computer science, software & game development, and artificial intelligence.

Thesis on "Automatic classification of vehicle models using a neural network based on synthetic training data"

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## Volunteering

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### Student Volunteer / SIGGRAPH 2021

August 2021, Virtual

Participated in the fully virtual conference. Assisted during Q&As and as moderator on the conference discord server.

### Faculty Council & Student Council / Stuttgart Media University

September 2018 - Today, Stuttgart

### Head of Student Cinema / Stuttgart Media University

March 2019 - Today, Stuttgart

Management of the student cinema at university. Program planning, technical support, licence procurement and organization of the weekly screenings.