Simon Zimmermann
Software Developer

Birth	June 5, 1993
Location	Düsseldorf, Germany
Mail	mail@simonzimmermann.com
Github	github.com/SimonZimmer

WORK EXPERIENCE

Dear Reality GmbH 2022-present

C/C++ Backend Software Developer
- Designed proprietary C-API based on DSP-prototypes using C99, C++17.
- Applied DSP-research in prototypes for internal evaluation using Python and MATLAB.
- Researched new developments in Digital Signal Processing related to Spatial audio.
- Developed custom API-wrapping tooling to facilitate rapid prototyping using C99 and Pure Data (Pd).
- Maintained DevOps pipelines using Microsoft Azure for Continuous Integration and Delivery of proprietary APIs and internal packages.

Dear Reality GmbH 2020-2022

C++ Fullstack Software Developer
- Full-stack development of real-time audio applications following test-driven development, modern C++ and agile project management principles.
- Designed cross-platform file codecs and internal tooling for maintaining data updates using FlatBuffers, Python, and Docker.
- Maintained self-hosted Jenkins build pipeline for Continuous Integration and Delivery.

Dear Reality GmbH 2017-2020

Researcher/QA Engineer
- Full-stack development of real-time audio applications following test-driven development, modern C++ and agile project management principles.
- Developed framework for automated real-time audio plugin testing.
- Developed DSP prototypes related to spatial audio.
- Tested real-time audio tools for quality assurance.

ISRW-Klapdor 2016-2017

Room-Acoustics Engineer
- Predictive simulation of room properties during construction to meet regulatory needs for speech intelligibility and thermal insulation in buildings.
- In-situ measurement and evaluation of room-acoustic properties during construction.

PROJECTS

dearVR Exoverb 2022

C/C++ Developer

Developed Reverb plugin with enhanced spatial perception that simulates acoustic scenes with three-dimensional depth and width using synthesized spatial room impulse responses.

Team Split Facilitation 2022

C/C++ Developer, DevOps Engineer

Transition from a single-team full-stack workflow to a frontend/backend team split with modernized DevOps infrastructure for continuous integration from an on-premise solution to a cloud-based solution.

dearVR MIX/MONITOR 2021

C++ Full Stack Developer

Developed the multichannel immersive headphone mixing plugins "dearVR MIX" and "dearVR MONITOR" which utilize headphone calibration, room simulation, and binauralization to virtualize studio environments. Supports adjustable virtual mix rooms and 26 multi-channel loudspeaker formats up to 9.1.6.

PUBLICATION

Co-Author 2021
Conference Paper

Immersive and 3D Audio: from Architecture to Automotive (I3DA): "Machine Learning-Based Room Classification for Selecting Binaural Room Impulse Responses in Augmented Reality Applications".

EDUCATION

M.Sc. Media Informatics 2018-2020
University of Applied Sciences, Düsseldorf

Thesis title: 'Scalable Modelling of Room Acoustic Characteristics for AR devices on the Basis of Visual Information Using Deep Learning' - honors degree.

M.Sc. Music Informatics 2018
University of Music, Karlsruhe

Guest Semester.

B.Eng. Media Engineering 2012-2017
University of Applied Sciences, Düsseldorf

Thesis title: 'A Concept for Implementing Room Acoustic Properties in the Context of a 3D-Audio Engine'.

SKILLS

Technologies

C++17, C99, Boost, CMake, Conan, Python, gtest/gmock, Google Benchmark, Pure Data (Pd), Azure DevOps, Github Actions, Jenkins, Git, Docker, JUCE, pybind11, Flask, Wagtail, MATLAB, LaTeX, Linux, nvim/vim

Languages

German (native), English (fluent)

Other

Music Production, Modular Synthesizer, Esoteric Programming Languages (Orca, TidalCycles)