

Christian-Alexander Hoffmann

Senior Software Architect & Full-Stack Developer with passion



📍 Wesseling (Cologne/Bonn area)

📞 +49 151 61025732

✉ mail@chris-hoffmann.ch

🌐 chris-hoffmann.ch

🌐 linkedin.com/in/cahoffmann

🐙 github.com/christian1984

📄 PROFILE

Software architect and full-stack developer with roots in aviation: aerospace engineer, former air force officer, in software development full-time since 2017. I design and build applications end-to-end – from requirements analysis through backend (Kotlin, Java, Go) and frontend (React, TypeScript) to CI/CD and operations – since 2025 predominantly agentic, with coding agents as the central tool and specifications as the foundation. On the side, a solopreneur with several published products.

📁 CAREER

Senior Software Architect & Full-Stack Developer Oct 2022 – today

ETECTURE GmbH

- ▶ Concept, design and development, plus requirements analysis and client consulting
- ▶ Since 2025 predominantly agentic software development with coding agents as the central tool – spec-driven, with review and safeguarding of agent-generated code through specifications, automated tests and CI
- ▶ Driver of the agentic way of working in the team: own Claude Code toolkit of custom commands, structured CLAUDE.md files and workflows that makes results reproducible and noticeably simplifies day-to-day work; shared across projects via Git submodules
- ▶ Backend with Kotlin, Java (Spring) and Go; frontend with React and TypeScript
- ▶ Database and interface design; DevOps with GitLab CI, Jenkins and infrastructure as code

Founder & developer (on the side) Sep 2011 – today

Own projects

- ▶ Mathemakustik, FSKneeboard, FSdesktop, curvymap and twists.io – see projects
- ▶ From idea through software and web shop to marketing and community

Software Architect & Full-Stack Developer Aug 2017 – Sep 2022

Fraunhofer-Institut SCAI

- ▶ Concept, design and development of the optimisation software “PackAssistant”
- ▶ Backend with C++ and CPPCMS; frontend with HTML, CSS, JavaScript and jQuery; database design

⚙️ SKILLS

Methods & AI

Agentic Coding Claude Code

GitHub Copilot

Spec-Driven Development

Test-Driven Development

LLM-Integration (OpenAI API)

Languages

Kotlin Java Go TypeScript

Python C++ C#

Backend & web

Spring React Next.js Node.js

Electron PHP HTML & CSS

Tailwind CSS

DevOps & tools

GitLab CI Jenkins Docker

Kubernetes

Infrastructure as Code Linux

Git Jira & Confluence

Data

PostgreSQL MySQL SQL

Data Science Basics

🌟 CERTIFICATIONS

2021 Data Scientist Basic Level
2020 Certified Usability Engineer
2011 Foundations of IT security

Working student & backend developer

Nov 2016 – Jun 2017

nextmarkets GmbH

- ▶ Interface between the backend and the Salesforce REST API
- ▶ Microservices based on Microsoft Azure and Service Fabric
- ▶ Telemetry and performance-analysis framework; master's thesis in parallel

Officer in the technical service

Jul 2003 – Jun 2015

Deutsche Luftwaffe

- ▶ Project manager for international defence and aerospace projects, incl. software support and IT security for the Airbus A400M
- ▶ Training manager NH90 & UH Tiger, and IT officer
- ▶ Company commander with leadership responsibility for 80 soldiers

EDUCATION

Master of Computer Science

Sep 2013 – Jun 2017

Trier University of Applied Sciences

Dipl.-Ing. in Aerospace Engineering

Sep 2004 – Mar 2008

Bundeswehr University Munich & University of Arizona, Tucson

LANGUAGES

German	Native
English	Fluent

OFF THE CLOCK

Amateur radio

Licensed radio amateur – radio waves, antennas and CW.

Running & cycling

Endurance sport to clear my head.

Motorcycling

Twisty back roads – which turned into curvymap.

Board games & tabletop

From family game night to the tabletop.

Volunteering

Chair of the parents' council at Johannes-Gutenberg-Schule Wesseling.

Project portfolio

OVERVIEW

- 01 FSKneeboard** *The kneeboard for the VR cockpit* **2021 – today** **PUBLISHED**

An add-on for Microsoft Flight Simulator that brings a kneeboard into the VR cockpit – navigation and approach charts plus notes, without taking the headset off.
- 02 FSdesktop** *Windows apps straight into the VR cockpit* **2022 – today** **PUBLISHED**

A utility for Microsoft Flight Simulator that streams any Windows desktop application into the VR cockpit – operable via mouse and a virtual keyboard.
- 03 curvymap** *Motorcycle navigation that loves curves* **2026 – today** **PROTOTYPE**

A motorcycle sat-nav of mine, for me: it favours twisty back roads, announces turns “by ear” and records rides with curve statistics – including share-ready images.
- 04 twists.io** *Interactive reading adventures for kids* **2023 – 2024** **ARCHIVED**

An AI/LLM-based web app that tells children ever-new, imaginative and interactive reading adventures – to spark a love of reading.
- 05 Mathemakustik** *Train mental arithmetic – by ear* **2011 – today** **PUBLISHED**

An acoustic mental-math trainer for Windows and Android: tasks are read aloud instead of shown, so you practise calculating purely by ear. A popular training tool for aspiring pilots and Lufthansa applicants.

01 FSKneeboard

The kneeboard for the VR cockpit



An add-on for Microsoft Flight Simulator that brings a kneeboard into the VR cockpit – navigation and approach charts plus notes, without taking the headset off.

In real aviation you strap a kneeboard to your thigh. In VR that was exactly what was missing: needing charts or notes meant taking the headset off. FSKneeboard closes that gap and is firmly established among VR enthusiasts in the flight-sim community.

WHAT I LEARNED

Hooking natively into a simulator with Go and FSUIPC, and building for a passionate niche community that knows exactly what it wants.

PERIOD

2021 – today

PUBLISHED

TECH STACK

Go fyne FSUIPC

JavaScript PHP SQL

PayPal API

LINKS

Website

fskneeboard.com

Project page & demo
chris-hoffmann.ch/en/p/fsk

02 FSdesktop



Windows apps straight into the VR cockpit

A utility for Microsoft Flight Simulator that streams any Windows desktop application into the VR cockpit – operable via mouse and a virtual keyboard.

In VR flight you are cut off from the outside world. FSdesktop brings it back: watch a tutorial video mid-flight, use comms software, or moderate your own chat as a streamer – all without taking the headset off.

WHAT I LEARNED

Streaming desktop content into a VR environment performantly with Electron, and making it usable when you cannot see your own hands.

PERIOD

2022 – today

PUBLISHED

TECH STACK

TypeScript Electron React

PHP SQL PayPal API

LINKS

 Website

fsdesktop.com

 Project page & demo

chris-hoffmann.ch/en/p/fsd

03 curvymap



Motorcycle navigation that loves curves

A motorcycle sat-nav of mine, for me: it favours twisty back roads, announces turns “by ear” and records rides with curve statistics – including share-ready images.

Exactly how I picture motorcycle navigation: not the fastest route, but the most fun one. I dug deep into the Valhalla routing engine and taught it to reward curves. It is also my first personal project built fully agentially: specification and tests first, then the coding agent.

WHAT I LEARNED

Understanding a routing engine from the inside and building a project rigorously spec-driven with a coding agent as the central tool.

PERIOD

2026 – today

PROTOTYPE

TECH STACK

Next.js tRPC Valhalla

PostgreSQL Leaflet Docker

Claude Code

LINKS

 Project page & demo

chris-hoffmann.ch/en/p/curvymap

04 twists.io

Interactive reading adventures for kids



An AI/LLM-based web app that tells children ever-new, imaginative and interactive reading adventures – to spark a love of reading.

The idea: reach reluctant readers through stories in which they make the decisions themselves. With my own son, for whom I built the first iteration, the approach works wonderfully. No longer hosted, but an instructive excursion into LLM products.

WHAT I LEARNED

Designing an LLM product for a very specific audience – children – balancing suspense, safety and simplicity.

PERIOD
2023 – 2024

ARCHIVED

TECH STACK

Next.js OpenAI API Auth0

FaunaDB Tailwind CSS

next-intl Lemon Squeezy

LINKS

▶ [Project page & demo](#)
chris-hoffmann.ch/en/p/twists

05 Mathemakustik

Train mental arithmetic – by ear



An acoustic mental-math trainer for Windows and Android: tasks are read aloud instead of shown, so you practise calculating purely by ear. A popular training tool for aspiring pilots and Lufthansa applicants.

Built as training software for the aptitude tests of aspiring pilots at Lufthansa, Austrian and Swiss – where the mental-math test is only read aloud. There was no good way to prepare for it back then, and Mathemakustik filled that gap. Today it is also used by aspiring management consultants preparing for case interviews, and by many for plain brain training. My longest-running project – including its own web shop, marketing and a full-version release in the Computerbild magazine.

WHAT I LEARNED

Finding a real market gap and running a product end-to-end for years – from the software to the shop to the community.

PERIOD
2011 – today

PUBLISHED

TECH STACK

VB.NET Android (Java) PHP

SQL PayPal API WordPress

LINKS

🌐 [Website](#)
mathemakustik.de
▶ [Project page & demo](#)
chris-hoffmann.ch/en/p/mmk