

Curriculum Vitae - Daniel Renkel

CTO Software Architect 3D Simulation Engineer

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Year of birth 1980
Living in Graubünden, Switzerland
Two kids



Languages

- German first language
- English fluent
- Spanish, Latin, Czech Only vocabulary
- Programming Languages C#, C++, HLSL, Java, PHP, TS, JS, SQL, VB

Education

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|------|------------------------------|--------------------------------------------------------------------|
| 2013 | Training Course | International and Multicultural Management (Telespazio) |
| 2008 | Bachelor of computer science | Modern Processors, User Interfaces, 3D Rendering (UAS Darmstadt) |
| 2000 | Abitur / Matura | Art, Mathematics, Religion, Physics (Viktoria Gymnasium Darmstadt) |
| 1998 | Internship | Nuclear physics (TU Darmstadt) |
| 1999 | Internship | Weather satellites (Eumetsat) |

Experiences

- **Project & Risk Estimations** from 50k €/CHF to 1.5mio €//\$
- **UX Design** Apps, Websites, Games
- **Process Optimization** Digital Transformation, Management Processes, Development Cycles
- **Agile Project Management** Teams of Sizes 3 to 15
- **Performance Optimization** 3D Engines, Simulations, Cloud Server Architectures
- **Software Architecture** Complex Systems. Apps, Websites, Server, 3D Simulations, Games
- **3D Software Development** Games, Game Engines, Simulations, WebGL, Oculus VR

Career - Roles

Swiss smart media	2016 – 2024	CTO & Head of Development
	2015 – 2016	Senior Solution Architect
	2014 – 2015	Lead Mobile Development
Telespazio Vega	2008 – 2014	Senior Software Engineer (3D and simulations)
Ludocrazy Games	2008 – 2015	Android Game Developer / Freelancer
Rocket Science Games	2006 – 2008	Assistant Producer
	2005 – 2006	Game Concept Designer, Project Manager
Massive Development Games	2003 – 2005	UX Designer, Associate Producer
	2002 – 2003	QA Tester, Special Effects Designer
Hoffmann Reiser Schalt DDB	2002	Junior Art (Creation, Conception, Digital, Print)

Career - Dimensions

	<u>as developer</u>	<u>as architect + manager</u>
Team size	3 - 15	5 - 10
Costs	50k - 4mio €/CHF	100k - 1mio €/CHF
Duration	3 - 48 months	6 - 80 months
Projects in parallel	1 - 2 (plus 2 - 3 maintenance)	2 - 5 (plus 5 - 10 maintenance)

Portfolio

- **Projects** at current employer swissmartmedia.com/category/projekte
- My **articles** at current employer swissmartmedia.com/webseite-verbessern
- **Videos** (especially Unity 3D) www.youtube.com/@sirleto
- Own projects **portfolio**, Freelancing gameprogramming.de
- **Android games** (2010) play.google.com/store/apps/developer?id=Ludocrazy+Games

Knowledge - Management & Consulting

- **Agile** business & development **processes** scrum, task tracking, risk tracking, customer involvement.
- Classic & agile **project management** planning, estimations, resource assignment and coordination of 5+ teams organizing teams with process workflows and tracking tools such as Atlassian Jira.
- **Test driven** processes business & development, manual and automated QA, regression tests.
- **Continuous delivery** processes from developer to testing, to management, to customer.
- **Customer relationship** B2B, B2C, B2G. local and worldwide. KMU, leaders, multinationals.
- **International outsourcing** small and large teams. near and offshore. experience with developers and cultures from: Central + West + East Europe, India, Bangladesh, Philippines, Latin America.
- **Digital transformation** review and consolidation of existing business, process gathering, digital benefits analysis, simplification, generalization, adaption, structuring, embedded innovation process.
- **Risk management** assessment, analysis, cost estimation, controlling, reporting, tracking.
- **Software definition** processes requirements, use case driven approach, agile, waterfall, tight testing.
- **Offering** and presentations listening to customers, unspoken wishes, concept drafting, blue ocean, feature presentations, round tables, brainstorming, vision formation.

Knowledge - Architecture & Development

- **UX and design** wireframes, layouts, mock-ups, UI, HUD, UX holistic process.
- **Website Optimization** SEO, rating systems, hard vs. soft approaches, Google Analytics.
- **Web-based technology** web services development, hybrid app architectures, APIs and models.
- **Project Architectures** backend, frontend, mobile, relational and document databases, high performance, low latency, cost efficient hosting, load balanced architectures, cloud hosting.

- **Programming** high performance, low latency, mobile development, simulators, office.
- **Programming Techniques** clean, readable, modular, maintainable, reusable code, abstraction, simplicity, software development patterns, data driven architectures.

- Knowledge of popular **Software Packages** Microsoft Office: Word, Excel, PowerPoint, MS Project; Google Office collaborative online: Docs, Spreadsheets, Presentation; Visual Studio, Eclipse, Adobe Photoshop, Premiere, Database tools, SQL tools, Roundtrip Architecture tools, 3ds max modeller, Game Engines: Unity 3D, Unreal 5, irrlicht.

Career - Highlights

paid career: 8 years CTO, 15+ years software architecture, 25+ years software development, 30 years UI + graphic design.

swiss smart media (2014-2024)

With 20 employees I worked as CTO, doing project management including estimates and offering, daily development team leadership, planning full architecture of apps, cloud-based server systems, web-based content management systems as well as UX designs.

- 2015-2024 **SIHF Hockey**
team lead, project management and architecture of app-system with eleven native Android + iOS apps for Swiss Ice Hockey Federation and many teams for the swiss first and second National Leagues. Live matches, push notifications, schedule, all information from competitions, teams and players including in-app subscriptions. Cloud based architecture for 50k Users viewing live matches with less than 1 second processing time of events.

- 2017-2024 **Coca Cola HBC**
iPad App + Server system to manage marketing and sales with customers, pick advertisement designs and send them to printing companies. Includes a graphic designer inside the app where images, texts and such can be changed and rearranged to fit any display need. Keeps tracking of customers, sales and synchronizes all offline actions. Cloud based process to handle giga byte large printing files.

2019-2024 **simatec**
Bluetooth enabled smart lubrication hardware is monitored by workers using smartphones. Our hybrid app connects to the BLE devices and our cloud-based server, storing all historical actions, offering a Rest Api for bulk customers and clear workflows as well as modern approach to new business models.

2020-2024 **digi check**
our vision was to create an automated scoring system for website SEO and other important digital transformation and business aspects. The web interface presents the user a very clear UX with a drill-down approach, summarizing scores in a pyramid system to facilitate clear steering meetings between different company groups. The cloud-based software is reading all reasonable public sources like Google SEO search console and many more to provide daily updates.

Telespazio Vega Deutschland (2008 – 2014)

With 100+ colleagues I worked as Senior Software Engineer in the trainings solutions department (space satellites and military helicopters). Programming 2D, 3D and networking engines as well as 3D simulation technology to allow for training workflows.

2013-2014 **Celestia Space Sim 3D**
for ESA we developed a 3d visualization of the Galileo Satellite constellation orbiting the earth. The vis reads data from the CSIM core, transmits them via TCP/IP and updates the simulated or real time orbital positions. Including test-driven-design tooling in C#, network protocol, JavaScript plugin, Lua scripts, modelling 3D models for real time 3d rendering of satellites and earth, using photoshop and 3dsmax.

2010-2013 **NH90 VMT 3D**
to cover the training needs for the qualification and certification of helicopter ground crews, the Virtual Maintenance Trainer (VMT) was developed. It allows for hundreds of maintenance training objectives and procedures to be practiced in a realistic virtual 3D environment. I was part of the core team and did programming on the simulator scheduler, the UI system and 3D framework. Aswell as In-Depth Inspection & Bug Fixing, Client / Server Architecture, Multithreading, Performance Optimizations. The development was realized using C++, C#, OpenSceneGraph 3D engine.

2008-2009 **STC**
this older training simulator for satellites was ported from Visual Basic into Java, then extended as a distributed network solution, with simulator running on a teacher's computer and all trainees having their controls on notebooks. It is a collection of 2D and 3D UI and simulation allowing 1:1 control of the simulated ESA satellite. I wrote the big refactoring, making the network connection REST and synchronization based, as well as changing DB, UI and 3D simulation.

Massive development (2002-2005)

With 20 colleagues I worked on developing the then well-known underwater 3D game brand Aquanox, leading the team as Associate Producer, as well as designing screen space effects and 3D particle FX, constructing complex animated interactive 3D User interfaces and helping with QA and community management tasks.

2003-2005 **Aquanox 2, PC+PS2** working on three versions of the underwater 3D action simulation, I was responsible for scene styling of all levels (fullscreen effects, particle effects, colour design) as well as the editing of all interactive 3D user interfaces like shops, etc. as well as the HUD of the game.

2002-2004 **Aquamark Benchmark** the Krass engine used for Aquanox as a partner of NVIDIA, was used to produce a benchmark measuring 3d capabilities of users' computers, combining CPU and GPU benchmarking. I was responsible for the scoring system, fillrate and vertex heavy test scenes (particle effects, underwater plants, etc). Part of the team that implemented the scoring DB, layouting the scoring results UI inside the benchmark and the layout of the website.

Career - Projects

*These are rough outlines of many further projects worth noting, but not listed in above **Career – Highlights** chapter.*

swiss smart media (2014-2024)

- 2019-2024 **Myni Gmeind**
innovations database in which partners can showcase ideas. B2G, G2G.
- 2022-2024 **hypt**
personal outsourcing with and for innovative Swiss marketing startup.
- 2018-2023 **Arkadis**
tablet and server system, food orders, simple UX for mentally disabled.
- 2019-2023 **Resurge Trial**
website for international project by the neurological department, Insel hospital.
- 2018-2022 **Demenzkompass**
informational website with special navigation for relatives of dementia patients.
- 2018-2022 **Grand Casino Bern**
web-based casino games with chances for prizes with physical visit
- 2019-2022 **Give a Rose**
affectionate digital version of give-a-rose fundraising campaign (Brot Für Alle).
- 2021-2022 **N.I.K.E.**
digital transformation consulting: catalogue of Swiss Nationale Informationsstelle Kulturerbe.
- 2016-2021 **Postauto OpenEye**
very complex android and server-based system to allow 800+ employees to check travellers for valid tickets, including fining. As CTO I only did project stabilization and process optimizations.

- 2018-2020 **Acceleris Nubiq**
Web frontend to manage payments of open-source cloud hosting.
- 2017-2019 **SASI**
Mobile App and Server System for construction safety. registers actions and interactions of workers in building sites, HR management features, offline features, recording everything with legal validity in case any accident happens, and insurance companies must trace it.
- 2014-2018 **Aha Allergy Pass**
E Health application where you can: Create a personal profile, record data and enter what allergies and intolerances you have, what symptoms you're showing, which medications you need to take, including in case of an emergency, who to contact, and where emergency medications are stored.
- 2015-2018 **Handy Safari**
Hybrid approach for a mobile quiz game with online synchronization.
- 2016-2018 **My Local Services**
Nationwide app that combines services from local businesses, the municipalities and Swiss Post.
Hybrid app approach with intercommunication between JavaScript and native features.

Telespazio Vega (2008 – 2014)

- 2014 **"Unnamed" Simulator**
Technical manager for artist team, preparation of content guidelines, work processes, selection process for hiring of 3D Artists
- 2013 **VSAP**
A web-based solution for project- and opportunities-tracking, refactored to newer standards and requirements as well as hosted on a local server. I developed a data driven design process for the project, which enabled setup by class reflection. This allowed for the database structure (MS SQL), the frontend layout (HTML, CSS, JavaScript) and backend (ASP .NET) to be updated for future requirements with a minimum of code changes (C#).
- 2012 **WRLZAA**
System design, including network and database, for a satellite reconnaissance and space debris system. I performed DB engineering and development of UI and tools in C++, C#, SQL. Also developed a prototype for concurrent space collision calculations, utilizing positional satellite data downloaded automatically from an online DB.
- 2010-2011 **TH06 CBT + FFS**
I refactored the original Multi-Function-Display's map implementation to support on the fly switching between different simulated avionic variants for Swiss Air Force used in both Computer Based Trainer and Full Flight Simulator.
- 2009 **CH-53 GA**
Concept of the Multi-Function-Displays and Digital-Map-Generator simulations for the Cockpit Procedure Trainer on the all-new digital controls for German CH53. This Cockpit Procedure Trainer was developed to run on desktop PCs and a hardware mock-up. Using the same framework that was refactored later for NH90VMT.
- 2009 **TPVF SDT**
Part of team effort to develop Test Analysis Tool, Scenario Definition Tool and Mission Planning Tool for Galileo global-satellite-navigation-system, I implemented map view which displays satellite trajectories using OpenGL 3D, written in Java as a plugin in Eclipse framework.

Ludocrazy Games (2008 – 2015)

2009-2015 **Yoga Marketing**

service provider for Websites, programming of custom CMS with PHP, SQL, HTML, CSS, JavaScript, Ajax. Creation of marketing materials with MS Publisher, Flyers, Graphics, photography, digital retouching with Photoshop. Assistance with organisation of retreats & travels to India and Spain.

2010-2014 **Android Games**

Independent development and Self-Publishing of a few small Android Indie Games. Developed using Android SDK, Native DK, Java, C++, OpenGL 3D and 2D Rendering. Realtime and turn based game logics, Japanese and Russian puzzle logics, Particle system and flow simulation done in C++ and Java. Procedural Content Generation, many Tools.

Rocket Science Games (2005 – 2008)

2008 **3D Racing Sim**

Consultant for quality, end customer suitability, presentation, copy protection.

2005-2008 **Casual Games**

Five games (2D and 3D) for PC, Nintendo DS, Older phones and handheld video game consoles, iPhone 1st Gen. Management tasks like project reporting, controlling for graphical Assets, Assistant management of artist team, conception of game mechanics, conception of new game ideas, project management of advertisement games, coordination with B2B customers (B2B), final work breakdown, scheduling, tracking.