

DANIEL BACHLER

CTO @ EdelweissConnect

Functional Programming Enthusiast | Former Photographer & Film Director

CTO and polyglot software architect with more than 15 years experience, a majority of them leading a remote team of engineers. Designs and implements highly reliable software solutions that are a joy to use, from polished web or native UIs to high performance data processing backends. Designed and implemented production CI/CD pipelines and GitOps based Kubernetes deployments for machine learning models.

Background in photography and film directing led to strong design, communications and leadership skills. Often finds himself translating between management and engineers. Enjoys learning new things and teaching others. Started two functional programming meetups in Berlin and spoke at several tech conferences and meetups. Fluent in English and German.

Most recently used tech stacks: F#, Elm, Python, Haskell, Docker, Kubernetes, Tensorflow, PostgreSQL, GraphQL, GCE, React

Currently learning/using on side projects: Rust, PyTorch

Experience in (not exhaustive): C#, C++, Typescript, R, Elasticsearch, AWS, Linux system administration

Non-programming skills: 3D Design, photography

PROFESSIONAL EXPERIENCE

CTO/Principal Software Architect at Edelweiss Connect GmbH

04/2016 – current

EU Research projects

Led a remote team that designed and implemented data management solutions for 4 big EU research projects (Horizon 2020 initiative) in the area of toxicology and nanomaterial safety with a combined value of more than 60 Million €. Tech stacks involved F#, Elm, Python, Scala, Postgres, Elasticsearch, Google Cloud Storage & Kubernetes Engine.

Project: Edelweiss data

From our experience with EU research projects suggested to management to create a product to support scientific data management, codenamed Edelweiss Data. Edelweiss data is a data management solution with rich metadata support for complex scientific datasets. The main goal is to facilitate interactive web based

browsing of big data repositories, rich metadata support to enable automated machine learning scenarios and easy interoperability with a wide range of workflow tools and programming languages used by scientists. Used F# (both Frontend and Backend), React, Elasticsearch, Postgres, Kubernetes.

Project: SaferSkin

Together with a data scientist and a UX designer designed and built a Skin Sensitization web application based on Bayesian Networks that was a hit at the worlds biggest toxicology conference for its ease of use and understandable yet in-depth reports. Used R, Weka, Python, RDKit, Elm, F#, Docker, Kubernetes.

Project: INTERVALS.science

Designed and built a data warehouse for organizing and publishing scientific data with rich metadata support and automatic DOI generation for a S&P 100 company in a team of two. The site is live and is one of the largest publicly accessible repositories for commercial respiratory experimental data. Used Python, GraphQL, Postgres, Elasticsearch, RabbitMQ

Lead Software Engineer at H.T.S. GmbH

02/2006 – 12/2015

Project: Zervice

Led a team that designed and implemented Zervice from scratch in C#, from conception to the big release and first point update. Zervice is by now the market leader for market research analytics software in Austria and expanding to other countries with an annual revenue of around half a million Euro. Was responsible for hiring and managing the engineering team as well as communication with our Beta testers. Designed the overall architecture of the software and app level UX.

On the engineering side of Zervice, my main responsibilities where the design and implementation of :

- the highly optimized, N-dimensional multithreaded core analytics engine
- a user friendly cost/reach optimization as well as a meta-optimization engine to finetune hyper parameters
- a proprietary algebra to deal with time-of-day response data in an intuitive way
- the graphical formula editor
- high level cryptographic primitives for the licensing and update mechanisms

Project: HTSTools

Internal data cleaning and transformation tool written in C#. Implemented several key algorithms to the specifications of the analysts in the company. Designed and implemented a DSL for complex data transformations. Suggested the benefit of creating a bridge between HTSTools and the statistical computing software R and implemented it to enable R-markdown based workflows for an improved auditing workflow.

Software Engineer at the Red Cross

10/2003 – 10/2004

Created a sophisticated permission system that deals with emergency access to confidential data. A slightly modified version is still in use today. The technology stack was mostly C#, ASP.NET and SQL Server.

Side project: AI Photo assistant

2018

Attempted to replace the human assistant at my wife's photo studio with an ML model that would handle subtle color correction based on a learned style model from previous data. Challenge was integrating fluently into the existing workflow based on Adobe Lightroom. Used Tensorflow to create a transfer learning model that attempts to set sliders for exposure, white balance and some other parameters inside lightroom. Got good results but not consistent enough to put the assistant out of work :)

Side Project: Tuneslides

2016

Photographic slideshow tool for professional photographers. Editor and Viewer run fully in the browser. Frontend built with the compile-to-Javascript, purely functional programming language Elm. Backend is a serverless stack using Javascript running on AWS Lambda exposing a REST Api backed by S3 and Amazon's NoSQL DynamoDB.

Iconoclash Photography Website

2017

Visual design and implementation of a CMS theme for iconoclash-photography.com

EDUCATION

Film directing (filmArche Berlin 2006–2009)

Journalism & Philosophy (University of Vienna, 2001–2003)

Software Engineering & Project Management (H.T.L. Spengergasse 1996–2001)

H.T.L. Spengergasse is a kind of special High School with a focus on software engineering, the level of formal IT education is roughly comparable to a BS in CS. Was trained in C, C++, IBM Mainframe Assembler, Prolog, Cobol, Java, PL/1 as well as project management and accounting/controlling. My finals project was a 3D game engine written in C++.