

Dipl.-Wirt.-Inf.

./ MARTIN DONATH . CV

CLOUD ARCHITECT / FULL-STACK ENGINEER

Universitätsstraße 77
50931 Cologne, Germany

+49 (0) 170 710 62 93
martin.donath@squidfunk.com



./ ABSTRACT

12 years of experience in software architecture and engineering

Applying modern methodologies for a holistic approach

Experienced in full-stack web development, serverless cloud architecture, system programming, distributed systems, infrastructure-as-code, real-time processing, embedded databases, huge datasets, natural language processing, information retrieval, devops, CI/CD, visualization, user experience design, responsive web design and test-driven development

Polyglot software engineer

Using languages as tools, not solutions

Fluent in TypeScript, JavaScript, Node.js, C/C++, Erlang, Ruby, PHP, Shell, HTML5 and CSS; some experience with Go, Python, Lua

Proficient software architect

Leveraging state-of-the-art technology

Advocate of Terraform, AWS, Serverless, Docker, GraphQL, Redis, Elasticsearch, Continuous delivery and integration

Broad domain knowledge

Experienced in multiple industries

E-Commerce, Finance/FinTech, Online Communities, Logistics, Pharmacy, Travel, Public Relations, Social Sciences, Music

Open source activist

Give, Give, Give, Ask

Maintainer of a dozen open source projects written in TypeScript, JavaScript, Terraform, C/C++, Erlang, Ruby and SASS

./ PROJECTS / CLIENTS

2018

DHL Corporate Development “Validation Sprint” – Consulting (Freelancer)

[PostIdent Foto, a product by Deutsche Post AG, used by DriveNow et al.](#)

Supporting a team of professionals in designing a fully automated identification process based on biometry and OCR, creation of storyboards and mockups, conceptual rework of the UI and UX, customer validation and coaching in respect to Design Sprint methodologies

2017 – today

HYPE = Volkswagen Stiftung + University of Bamberg – Subcontractor (Freelancer)

[A research project analyzing tone and exposure of news topics over time](#)

Design and implementation of a distributed crawler architecture using the AWS Platform, infrastructure-as-code using Terraform, scheduling with AWS Lambda and GraphQL, execution using AWS Batch and ECS, Docker-based crawler definition architecture, layout extraction and screenshotting of pages, implementation of a management user interface based on React, Redux, Recompose and GraphQL/Apollo, serverless authentication with AWS Cognito, mono-repo approach with build pipeline based on AWS CodeBuild

Applied Technologies: Node.js, TypeScript, Python, Docker, Terraform, Grafana, AWS (Batch, CodeBuild, Cognito, CloudFront, API Gateway, EC2, ECS, IAM, Lambda, SimpleDB, S3), React, Redux, Recompose, Material UI, GraphQL, Apollo, Chromeless, Babel, Webpack, Bash

2017 – 2018

TrustedShops GmbH – Consulting and Development (Freelancer)

[The leading seal of approval for online shops in Europe](#)

Technical design and implementation of a modern web interface for the eTrusted platform to be rolled out to all B2B customers based on Angular and GraphQL/Apollo, introduction of Atomic Design methodologies and test-driven development, extensive automation of the development workflow and build pipeline, facilitating pair- and mob-programming sessions to introduce the companies' developers to the technologies used for implementation, participation in architecture and design decisions with immediate strategic implications, work with and report directly to the CEO

Applied Technologies: Node.js, TypeScript, JavaScript, ES6, Docker, Terraform, AWS (API Gateway, CloudFront, Lambda, RDS, S3), Angular 5, GraphQL, Apollo, Babel, Webpack, Bash, Atomic Design

./ PROJECTS / CLIENTS

2017

AIDA Cruises / Costa Digital Unit – Consulting and Development (Freelancer)

Development of the MyAIDA App for onboard booking and communication

Support for all onboard chat-related topics, e.g. integration of Push Notifications (APNS/FCM), development of several custom extensions for MongooseIM, technical measures to compensate for extremely unreliable networks on the cruise ships (serializability, atomicity, etc.), optimizing maintainability of the chat's code base by restructuring the build pipeline, development of integration tests and service mocks, solving connectivity issues

Applied Technologies: Erlang/OTP, XMPP, Ejabberd, MongooseIM, MongoosePush, JavaScript, ES6, React Native, GraphQL, Docker

2017

Solvians GmbH – Consulting and Development (Freelancer)

Technology provider for the financial industry with focus on web technologies

Support for technical integration after acquisition of my company, VOOLA, in 2016, migration of the embedded database system, the web application and data handling layer into self-contained Docker images/containers, performance-tuning on the embedded database system to handle 200k quotations/updates per second, optimization of the runtime configuration for maximum flexibility, technical support for deployment and networking-related issues

Applied Technologies: C/C++, Erlang/OTP, Ruby on Rails, Node.js, JavaScript, ES6, Docker, MySQL, Elasticsearch, Memcached, LevelDB, ZeroMQ, Protocol Buffers, Autotools

2017

App Arena GmbH – Consulting (Freelancer)

A young Online-Marketing company developing Facebook Apps

Design of a distributed pub-sub system based on Amazon Lambda and Serverless to augment arbitrary events with additional data from a multitude of sources, i.e. geo-tagging, anonymizing and categorizing events related to website analytics, definition of work packages for an efficient implementation through near-shoring

Applied Technologies: AWS (Lambda, IoT, S3, Elasticsearch), Serverless, Redis, Elasticsearch, JavaScript, ES6

./ PROJECTS / CLIENTS

2016 – 2017

Shop Apotheke – Consulting and Development (Freelancer)

One of the largest pharmacy online shops in Europe, on behalf of RedTecLab GmbH

Integration of a SaaS solution for the website-wide search functionality as a drop-in replacement for the current search solution, Atomic Design from the ground up with automated screenshot testing, test-driven development, and continuous integration using BrowserStack and Jenkins, implementation of a Varnish-based local development proxy using Docker, all frontend components with no-script fallbacks and a low-level abstraction layer for the SaaS solution to prevent vendor lock-in, definition of a cutting-edge development process

Applied Technologies: Node.js, Express, JavaScript, ES6, Debian Linux, Docker, Ansible, Varnish, Gulp, BrowserStack, Gemini, Mocha, Babel, Webpack, HTML5, SASS, Jenkins, Jira, Atomic Design, Patternlab

2016

Hypo Landesbank Vorarlberg – Consulting and Development (Freelancer)

A mid-sized Austrian bank with consumer focus, on behalf of Sevenval GmbH

Technical project coordination, requirements engineering for a TYPO3-based system, migration and adaptation of all custom extensions, rewrite of several custom extensions, implementation of a custom-tailored complex approval process with deep integration into the CMS, technical concept and implementation of the full-responsive frontend using mobile first paradigms, transition to Atomic Design principles, responsive images, implementation in a way that the interface works entirely without JavaScript using progressive enhancement, workshops on how to use the newly implemented functionality on the client's site

Applied Technologies: TYPO3, ExtBase, PHP, JavaScript, MySQL, Vagrant, Gulp, Gemini, Mocha, HTML5, SASS, Jira, Atomic Design, Patternlab

2016

Icebreaker GmbH – Consulting and Development (Freelancer)

A full-service agency based in Cologne

Implementation and design of a landing page for a German real estate fund, modernization of a WordPress template for a well known EU-level politician

Applied Technologies: JavaScript, WordPress, Gulp, HTML5, SASS

./ PROJECTS / CLIENTS

2013 – 2016

VOOLA GmbH – CTO (Co-Founder, acquired by Solvians GmbH in 2016)

A FinTech startup building a search engine for financial instruments

Design and implementation of an embedded database system to handle 2.5 bn quotations/updates per day with real-time search capabilities, development of an automata-based natural language processing engine to extract meaning from unstructured search queries, integration and normalization of various legacy data formats into a unified Protocol Buffers-based format, development of unit tests and deployment of continuous integration practices, user experience design, definition and design of the whole corporate identity including logo, business cards, typography and colour schemes

Applied Technologies: C/C++, Erlang/OTP, Ruby on Rails, Node.js, JavaScript, MySQL, ElasticSearch, Memcached, Redis, LevelDB, ZeroMQ, Protocol Buffers, Debian Linux, nginx, Graphite, Gulp, HTML5, SASS, Bourbon, Susy

2013 – 2016

DIE PR-BERATER GmbH – Consulting, Development and Operations (Freelancer)

A full-service agency with clients like BMBF, NRW.INVEST, Stadt Köln and GIZ

Technical project coordination and quality assurance for the NRW.INVEST website relaunch, design and development of a web-based solution for trade fair visitor management, system operations and infrastructure management, general user experience design and responsive web design for a multitude of clients and branches

Applied Technologies: Node.js, Express, JavaScript, Ruby, PHP, MySQL, TYPO3, Symfony, Silex, Debian Linux, nginx, Graphite, Postfix, Dovecot, Gulp, HTML5, SASS, Bourbon, Susy

2011 – 2012

Thebing Software GmbH – Consulting (Freelancer)

Integrated management solution for language travel agencies and schools

Qualitative and quantitative analysis of existing software project management methodologies, introduction support for agile methodologies, deep analysis of the company's codebase, derivation of metrics and recommendations for action, prolonged support for the implementation of the recommended actions, technical support for continuous integration

Applied Technologies: PHP, Jenkins, phpUnderControl, Debian Linux, Vagrant

./ PROJECTS / CLIENTS

2007 – 2011

wer-kennt-wen.de GmbH – Software Architecture (Freelancer)

A German online social network with 10 million registered users

Migration to a scalable and highly distributed architecture, introduction of a MVC-based application architecture, development and implementation of a lightweight and backend-independent ORM layer, workshops for the company-wide deployment and usage of the ORM layer, development of database-related fully transparent partitioning-, access- and persistency mechanisms for a 500+ server farm, implementation of a distributed and partitioned list data structure, test-driven development methodologies, identification and optimization of performance-critical code regions, data mining and statistical analysis of user-generated data, visualization of user-generated data for exploration

Applied Technologies: PHP, Zend Framework, Node.js, JavaScript, MySQL, Memcached, Sphinx, Debian Linux, Apache, HTML, CSS

2006 – 2007

plan-i GmbH – Web Development (Freelancer)

Integrated web-based solutions for SMEs

Development and implementation of specialized web-based order management systems and online shops for various branches, design and development of a web-based solution for trade fair planning and organization for Koelnmesse

Applied Technologies: PHP, JavaScript, MySQL, Apache, HTML, CSS

2005 – 2006

plan-i GmbH – Web Development (Internship)

Integrated web-based solutions for SMEs

Ongoing development of a proprietary content management system solution, implementation of websites on the basis of the proprietary solution

Applied Technologies: PHP, JavaScript, MySQL, Apache, HTML, CSS

./ PROJECTS / OPEN SOURCE

2018

<https://github.com/squidfunk/terraform-aws-cognito-auth>

Serverless Authentication as a Service (AaaS) provider built on top of AWS Cognito

Add authentication to your Single Page Application within minutes and take full control of the authentication flow including customizable email templates and a beautiful default UI.

Applied Technologies: Node.js, TypeScript, Terraform, AWS (Cognito User Pools, CloudFront, API Gateway, IAM, Lambda, DynamoDB, Route 53, S3, SNS, SES), React, Redux, Recompose, Material UI, GraphQL, Apollo, MJML, Babel, Webpack, Bash

2016 – 2018

<https://github.com/squidfunk/mkdocs-material>

A Material Design theme for MkDocs

Material is a theme for MkDocs, an excellent static site generator geared towards project documentation. It is built using Google's Material Design guidelines, fully responsive, optimized for touch and pointer devices as well as all kinds of screen sizes. At the time of writing it's the most popular third-party theme for MkDocs on GitHub and used by thousands of open source projects and companies like Microsoft, Netflix, Samsung, SAP, Siemens and Zalando.

Applied Technologies: Node.js, JavaScript, ES6, Docker, Alpine Linux, Python, Travis CI, Gulp, Babel, Webpack, HTML5, SASS, Shell

2013 – 2016

<https://github.com/squidfunk/protobluff>

A modular Protocol Buffers implementation for C

protobluff is a modern, super lightweight and modular implementation of Google Protocol Buffers for the C language, a data exchange format developed at Google and open sourced in 2008. It is far more compact than JSON and XML and eases interoperability in distributed polyglot (multi-language) environments.

Applied Technologies: C/C++, Protocol Buffers, Autotools, Valgrind, Travis CI

This list is only an excerpt of the open source projects I'm maintaining. See

<https://github.com/squidfunk> for a full list.

./ EDUCATION

2006 – 2011

University of Cologne (Cologne, Germany)

Dipl.-Wirt.-Inf. in Information Systems (1.7)

Specialization: Information Management, Supply Chain Management

Thesis: Predicting Rejection In Online Social Networks (1.0)

./ PUBLICATIONS

2014

Using Weighted Interaction Metrics for Link Prediction in a Large Online Social Network
Socioinformatics – The Social Impact of Interactions between Humans and IT

Posegga, O., Fischbach, K., & Donath, M. (2014). Using Weighted Interaction Metrics for Link Prediction in a Large Online Social Network. In K. Zweig, W. Neuser, V. Pipek, M. Rohde, & I. Scholtes, Socioinformatics – The Social Impact of Interactions between Humans and IT (pp. 63–79). Cham: Springer International Publishing. doi:10.1007/978-3-319-09378-9_5

2013

Using Users' Activity Metrics for Link-Prediction in a Large Online Social Network
Proceedings of the INFORMATIK 2013, Koblenz, Germany

Posegga, O., Donath, M., & Fischbach, K. (2013). Using Users' Activity Metrics for Link-Prediction in a Large Online Social Network. Proceedings of the INFORMATIK 2013, Koblenz, Germany (LNI, Vol. 220, pp. 1175–1176).

2013

Rejection in Online Social Networks
Presented at the XXXIII Sunbelt Social Networks Conference

Posegga, O., Donath, M., Fischbach, K., & Putzke, J. (2013). Rejection in Online Social Networks. Presented at the XXXIII Sunbelt Social Networks Conference of the International Network for Social Network Analysis (INSNA), 21-26 May 2013, Hamburg.

./ VOLUNTARY WORK

2016 – today

Mentoring and Coaching

[Supporting the startup scene](#)

Working as a mentor and coach for startup-related events like Google Launchpad, e.on :agile accelerator Launchpad, and the Startup Weekend Cologne, passing on my experiences in bootstrapping and running a startup from the business- and technology-perspective.

2004 – 2011

Stadtgruen

[An Ambient/Techno netlabel](#)

Stadtgruen, which was founded by Axel Bergk and Martin Donath in 2004, was an international artist collective and record label entirely operating on the Internet which offered Ambient and Techno music for free download – a so called **netlabel**. Among other netlabels that existed at the time, Stadtgruen was one of the most critically acclaimed, as it offered very high and consistent quality throughout all of its releases. In total, there were 50 artists from all over the world, including nations like Germany, Switzerland, Austria, Denmark, Argentina, Slovakia, Latvia, Sweden, the UK and the USA, contributing to a total of 45 releases. The music from Stadtgruen was downloaded 2 million times.

The most important tasks were artist acquisition and management, booking management, general marketing and advertising, mastering (finishing touches on the artists' productions) and coordination among several volunteers from various nations who helped out on development and marketing, as well as web- and print-design.

./ MISCELLANEOUS

What I do when I'm not coding

[Random things I'm interested in that you can ask me about](#)

Electronic music production, playing/performing live, photography, web- and print-design, tech-blogging, disassembling and repairing iPhones and MacBooks, race cycling, running, snowboarding, diving, gardening and cooking with chili peppers, traveling and green tea