Timo **Volkmann**

SOFTWARE ENGINEER

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Skills

Backend	Go, Java, Spring Boot, node.js, Python, RestAPIs, GraphQL, Websockets, MQTT, OpenID Connect / OAuth 2.0, C#/.NET, Bash, PHP, Laravel
Frontend	Javascript, Vue.js, Quasar, React, next.js, HTML5, CSS, SCSS, Styled Components
Database	MariaDB, PostgreSQL, MySQL, MongoDB, Badger
DevOps	Docker, Vagrant, Git, CI/CD, Gitea, Drone.io, Traefik, nginx, Keycloak, Wireguard, Linux, Minio, Oracle Cloud
Other	OpenAPI, OWASP, Scrum, Kanban, UML, BPMN, IAM, Design Thinking, Cloudflare
Languages	German, English

Technical Experience

Software Engineer - Open-Source Development (Go, Vue.js)   *Remote - Stuttgart, Germany*

PHOTOPRISM (GITHUB.COM/PHOTOPRISM/PHOTOPRISM)   *July 2021 - January 2022*

Designed and implemented a POC for OpenID Connect integration and assessed security details of current implementation in PhotoPrism in close cooperation with the maintainers in the context of my final thesis at Heilbronn University of Applied Sciences.

- Implemented a minimum of viable functionality to enable PhotoPrism to be used by multiple users (Go)
- Implemented conditional rendering in frontend (Vue.js) for user roles/permissions, using PhotoPrisms role based access control system
- Evaluated several OpenID Connect libraries (Go)
- Assessed security of current implementation (mainly API and session handling) according to OWASP ASVS
- Automated unit- and integration testing (Go)

Consulting and Full-Stack Development (PHP, Laravel, Vue.js)   *Heilbronn, Germany*

STYLE-BOSS SCHMUCK   *September 2021 - today*

Client asked for help with a custom made CRM/ERP for commission based sales processes, integrated with Shopware 5.

- Implemented new team-based commission system and improved database layout (PHP, Vue.js, MySQL)
- Fixed several bugs from past maintainers (PHP, Vue.js)
- Continuously improving processes on daily usage experience and support in close cooperation with client

Consulting and Full-Stack Development (next.js)   *Heilbronn, Germany*

DAS QUARTIER (DASQUARTIER.ORG)   *February 2021 - April 2021*

Concept, implementation and hosting an integrated website with Squidex (headless CMS), next.js frontend and OneDrive integration for a german holiday apartment agency.

- Headless CMS (Squidex with MongoDB) for administration and API (GraphQL, REST)
- Implemented frontend with next.js and React
- OneDrive integration for apartment images with image resizing proxy and Cloudflare CDN caching for fast page loading
- CI/CD pipeline with Gitea and Drone.io, staging and production environments
- E-Mail Scraping / Spam Bot Mitigation Strategy
- Hosting on self-managed VPS via Docker
- Architecture illustration: app.box.com/s/iwcjqcwy36v8sy8f105upev9f5adeiv2

DevOps / Full-Stack (Internship)   *Abstatt, Germany*

BOSCH ENGINEERING GMBH   *September 2020 - February 2021*

- Bitbucket Migration: Scripts with Python, collecting information from repository owners about project state and analyzing inter-repo dependencies to clean up data before migrating
- Tool Catalog: Maintained xml-based RestAPI on internal tool aggregation platform and outlined a draft for an simplified Swagger-API (C#, .NET)
- Tool Catalog: Managed tasks and supervised developer team in india
- Evaluating OpenShift for internal applications, replacing docker-compose
- Evaluating Go for internal application development, including POC web-toolbox with Hexagonal Architecture (Go)

Projects

Travopti – travel optimizer application

Heilbronn University of Applied Sciences

Heilbronn, Germany

February 2020 - August 2020

Proof-of-Concept web application, optimized for mobile, to search and filter travel destinations according to personal preferences (weather, landscape profile, cultural parameters, cost of living and housing).

- Campus Cup: Simulated interdisciplinary start-up pitch with business and tech part (6 team members, 3 developers)
- Used design thinking to develop product idea
- POC with express.js, Angular and MariaDB
- Data aggregation from different sources
- Source code: git.timovolkmann.de/tvolkmann/travopti
- Mobile UI samples: app.box.com/s/3pmc8fphhnex51bdfa256b76gwctbps8

gyrogpsc – realtime GPS dashboard

Heilbronn University of Applied Sciences

Heilbronn, Germany

October 2020 - February 2021

Realtime location data streaming application with pragmatic dashboard for live comparison and recording of GPS data with Ublox NEO-M8U as reference datasource (via serial interface). Second source (i.e. phone) can be fed into program via TCP (WiFi).

- Go backend with stream-based data processing
- Serial and plain TCP interface to feed data into processing pipeline
- Web-based UI made with plain HTML and JS
- Leveraged WebSockets for realtime push updates from server, capable of client multiplexing
- Record and Replay functionality via embedded persistent K/V-Store
- implemented relevant UBLOX binary protocol parser in Go
- Source code: git.timovolkmann.de/tvolkmann/gyrogpsc
- Web UI samples: app.box.com/s/wdqca127ssaph49t7lx1yuhcxl79llig

Smart Garden – automated home gardening

Heilbronn University of Applied Sciences

Heilbronn, Germany

April 2020 - August 2020

Home gardening system with ESP32 microcontroller, using sensors to track different plant environment parameter and automatic irrigation and light control, including backend and web-based dashboard.

- Designed software architecture, choosed technologies and managed team (4 developers)
- Data aggregation via WiFi, MQTT and MongoDB
- Meteor.js based web application for displaying data. Capable of handling and configuring multiple appliances via WiFi
- Sensors for moisture, temperature, light and humidity, actors for irrigation and light
- Programmed ESP32 sensor/actor logic with FreeRTOS and C using Platform.io
- Source code server: git.timovolkmann.de/tvolkmann/smart_garden_server
- Source code esp32: git.timovolkmann.de/tvolkmann/smart_garden
- Architecture and UI sample: app.box.com/s/zvmcts6u52qr0xt43enxd2edyvuvildj

BUGA '19 Geocaching web application

Heilbronn University of Applied Sciences

Heilbronn, Germany

March 2019 - August 2019

Team cooperation project with Heilbronn University of Applied Sciences and Bundesgartenschau Heilbronn (BUGA 2019). Web application to discover areas and points of interest while playing geochaching.

- Backend: Java, Spring Boot, MariaDB
- Frontend: Vue.js, Vuex, Quasar
- Integration of OpenStreetMaps, API-based QR-code generation via goqr.me and browser-based QR-code scanning
- Team (6 developers) organized via Scrum (JIRA, Bitbucket)
- Source code: git.timovolkmann.de/tvolkmann/labswp_2019_sose_geocaching
- Images: app.box.com/s/a34hybq763i2ueoyzyfufaqq8n8x2u09

Education

B.Sc. in Software Engineering (Systems Engineering)

HHN (Heilbronn University of Applied Sciences)

Heilbronn, Germany

September 2017 - March 2022

Training media designer / advanced technical college entrance qualification

eder GmbH / Johannes-Gutenberg-School Stuttgart

Stuttgart, Germany

September 2011 - July 2014

Previous Activities

Media services (Layout, image retouching, photography for print and digital)

Self-Employed

Heilbronn, Germany

January 2014 - December 2020

Creation of business and advertising materials, image retouching, design and creation of web presences.

EGS-plan GmbH *Stuttgart, Germany*

Internship Structural/Building Physics *March 2017 - June 2017*

sound insulation, room acoustics, thermal insulation, measurements.

eder GmbH *Stuttgart, Germany*

2D Artist (Digital/Print Media Designer) *September 2011 - July 2016*

Creation, final artwork and adaptation of artwork, creative retouching and post production.

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