As a technical lead and software architect for embedded systems, I love to work in interdisciplinary, distributed teams. I gathered experiences in working together with colleagues from Germany, Serbia, Switzerland, Portugal etc. when successfully leading the software developments for IIoT devices or a module of a patient monitor. In my last project, I enabled a team to develop the firmware of a smoke detector.

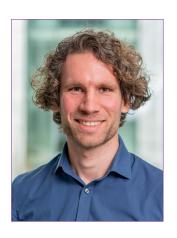
Personal Information

Name Adrian Winterstein Address Niederwiesenstraße 6 64331 Weiterstadt

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Nationality German



Professional Experience

2023 - Present **Software Architect & Developer**

Self-employed (Project Reference)

Freelance project work with a focus on embedded software architecture and software development with C++. In addition, consulting and implementation in the areas of CI and testing with Pytest and CppUtest as well as infrastructure with Ansible and Docker.

Project:

Optical Beam Smoke Detector (C++ with FreeRTOS on Arm Cortex)

2021 - 2023 Lead Embedded Software Architect

Zühlke Engineering GmbH (Employer's Reference)

Architect and technical lead in the area of device creation in remote projects with a focus on C++ (bare metal / RTOS), CI & testing and firmware updates:

- Guidance of international software development teams
- Responsibility for the software architecture
- Responsibility for the conception and implementation of test environments for device developments (implemented with Pytest)
- Coaching the technical lead in a project

Additionally, besides the project work: Career coaching for colleagues in the embedded software development group.

Projects:

- Architecture Consulting for Coffee Machines (C, C++ Bare Metal)
- Digital Traffic Beacon (C++ with FreeRTOS and AWS IoT Core)
- Sensor Connection for Patient Monitor (C++ with FreeRTOS, Qt)

2018 - 2020 Expert Software Engineer

Zühlke Engineering GmbH (Employer's Reference)

Software Engineer for system projects. In the Tech Lead role responsible for the firmware development of an IoT device for the predictive maintenance of railway infrastructure:

- Responsibility for software architecture and quality
- Interdisciplinary work at system level
- o Requirements engineering with the customer's product owner
- Leadership responsibilities for five software developers
- International cooperation with colleagues from Serbia
 Additionally, besides the project work: Supporting new colleagues through C++ training and mentoring. Conducting interviews with applicants.

Projects:

- IoT Device for Rail Switches (C++ with FreeRTOS on ARM Cortex)
- GUI Component of a Test Stand Software (PyQt on Linux)
- Security Platform (C++ on Linux with Yocto)

2016 – 2017 **Software Engineer**

Zühlke Engineering GmbH (Employer's Reference)

Software development and consulting for embedded systems with a focus on C++. Gradually taking on more responsibility for project success and direct client communication.

Projects:

- Test Stand for an Oven (NI Teststand and C++ on Windows)
- Platform for Lab Analysis Devices (C++ and Python on Linux)
- Tea Machine (C++ with FreeRTOS on Arm Cortex)
- Prototype for a Coffee Machine (C++ on Arduino)
- Architecture Review of Industrial 3D Printers Control (C++ and Qt)

2014 - 2015 Junior Software Engineer

Zühlke Engineering GmbH (Employer's Reference)

Software development for embedded systems as a young professional (C, C++ and Qt). Collaboration in agile projects and taking over initial responsibilities in communicating with customers and support of a junior colleague.

Projects:

- Diagnostic Tool for High-end Converters (Qt on Android)
- Control System for Chillers (C++ with FreeRTOS on Arm Cortex)
- System for Tracking Transported Goods (C with FreeRTOS on Arm)

2013 - 2014 Research Assistant

German Cancer Research Center (Employer's Reference)

Research in the field of computer-assisted interventions. Development of an ultrasound-based assistance system for minimally invasive implantation of markers around a tumor. Implementation and evaluation of the system in cooperation with medical personnel. Publication of the research results.

Project: Navigated Implantation of Radiation Markers (C++ and Qt)

2011 - 2013 Research Assistant

Center for Adv. Security Research Darmstadt (Employer's Reference)

Research in the fields of IT security and image processing, in a joint project of Fraunhofer IGD, Darmstadt University of Applied Sciences, the Federal Criminal Police Office and industrial partners. Publication of the research results.

Project: Detection of Ears on 3D Profile Images (MATLAB)

2007 - 2014 System Administrator & Web Designer

Self-employed

Side-jobs in the areas of system administration of client-server environments and CRM systems and web design for multiple clients:

- Human resources and management consultancy
- Law firm
- Seminar organiser

Certifications

07 / 2019 Certified Professional for Software Architecture (CPSA-F)

International Software Architecture Qualifications Board (Certificate)

06 / 2015 Certified Tester (CTFL)

International Software Testing Qualifications Board (Certificate)

11 / 2014 Certified Professional for Requirements Engineering (CPRE FL)

International Requirements Engineering Board (Certificate)

Awards

05 / 2014 Preis des Fachbereichs Informatik (h da)

For the best master's thesis (Award)

11 / 2012 **CAST-Förderpreis IT-Sicherheit 2012**

First in the category bachelor's theses and student projects (Award)

06 / 2006 Förderpreis für Schüler der Heinrich-Emanuel-Merck-Schule

For the best high-school graduate (Award)

Education

04 / 2014 Master of Science (ECTS Grade: A)

Darmstadt University of Applied Sciences

2012 - 2014 Studies of Computer Science (M.Sc.)

Darmstadt University of Applied Sciences

Master's thesis: Development of a System For Navigated Implantation

of Radiation Therarpy Markers

02 / 2012 Bachelor of Science (ECTS Grade: A)

Darmstadt University of Applied Sciences

2009 - 2012 Studies of Computer Science (B.Sc.)

Darmstadt University of Applied Sciences

Bachelor's thesis: Development of an Algorithm for the Detection of

Ears on 3D Profile Images

Civilian Service

2006 - 2007 Civilian service in a retirement home

Sozialzentrum Ohlystift

Digital Skills

Programming C++, Python, C, Rust, MATLAB, Perl

Libraries Qt, Boost

Testing Pytest, Google Test, Cpputest

Microcontroller ARM Cortex, Arduino

Operating Systems FreeRTOS, Linux, ZephyrOS

Documentation LaTeX, Markdown, Polarion, Asciidoc

Processes Agile Entwicklung, Scrum, Test-Driven-Development, V-Modell

Buildsysteme CMake, Yocto, Make

DevOps Continuous Integration, Ansible, Docker, Azure DevOps, TeamCi-

ty, Jenkins, Vagrant, Chef

Tools Git, Bash, Visual Studio Code, QtCreator, Subversion, Atlassian

Toolsuite

Language Skills

German Mother-tongue

Englisch Proficient