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# ENRIK BREGASI

Dipl. Ing. Dipl. Programmierer Xilinx SW Designer

## PROFILE

I was born on 09/04/1961 and have established myself over the last 25 years as a freelance Software Architect & Developer for Embedded Systems, with and without AUTOSAR, CLASSIC & ADAPTIVE, hardware-related and for systems, PC Windows, Linux, QNX, C, C++, 3D graphics and visualization, AI developer with my own developed C and C++ modules according to today's standards.

✦ I bring speed, security, and standard solutions to your software projects in the implementation. My experience is your advantage.

Published book:

"C++ Reinforcement Learning Agent applied in a chess engine"  
[amazon.de/dp/B0F7RKD3PM](https://amazon.de/dp/B0F7RKD3PM)/[www.amazon.de/dp/B0F7RKD3PM/](https://www.amazon.de/dp/B0F7RKD3PM/)

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## PROJECTS

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## OWN DEVELOPMENTS AND PRODUCTS IN AI AREA

Continuously since 2004 Further developed work in the area of intuitive AI; my first "Deep Learning" module at that time was a backpropagation network to learn mouse movements. Today I have my own AI modules, partly generic AI such as Transformers, Reinforcement Learning, and other AI modules with applications in C++ implementation. A preview can be found in my first book C++AI-Implementation in Chess. Furthermore, at this time, there are various modules for source code generation by AI, unit test generation by AI, automatic debugging by AI, test execution by AI, evaluation against requirements, static, dynamic diagrams that are generated by the software itself during runtime, locally and distributed on the intranet. All AI modules are in C++17, based with reference to PC and microcontroller control units Status Q. Several well-known algorithms such as Monte Carlo Tree Search, Upper Confidence Bound, generic reinforcement learning Agent, Deep Learning through Neural Network in various combinations such as Convolutional, Fully connected, RELU and more. Artificial Intelligence

- Multiple developments in the AI area. See my book Technologies, Tools, and Methodologies Used
- Multiple developer tools (Eclipse, Visual Studio, Own Tools) and systems: (Linux, Windows PC, Microcontroller from NVIDIA Systems – Jetson AGX ORIN, Jetson NANO)
- Own Tasks and Role in Project
- Developing generic software for robotics, industry, embedded, AUTOSAR (both Adaptive, classic)

## SOFTWARE ARCHITECT ASIL-B CONTINENTAL VILLINGEN-SCHWENNINGEN

06.2022 – 10.2023 Task: Customer project as leading SW Architect for a customer project TSU (Tachograph Simulation Unit) from start to nomination. Designing the complete architecture of the project based on SW requirements including SW architecture and SW detail design, designing SW test definition, interfaces. Tooling: IBM Rhapsody 8.3.1. Generators were designed by me for generating architecture documents. SW Development Team was accompanied and supported by me. An AUTOSAR DET Log mechanism was conceived and developed by me. Multiple possibilities for log outputs. Part 2 as SW Architect in Tachograph Platform participated. Architecture for multiple modules was designed with detail design, interfaces, tests, documentation generation.

### Technologies, Tools, and Methodologies Used

Git, Version Control, IBM Rhapsody, EB Tresos, IBM DOORS, Agile Process with Sprints, Programming Language C, Standards AUTOSAR classic, ASIL-B Certification. ECU-Hardware was a Traveo II from Infineon with 2Cores.

Own Tasks and Role in Project:

1. Design, development of software architecture, detail design, unit and integration tests, with a focus on quality to fulfill software requirements.
2. Leading the software architecture and development team, coaching development team to implement the architecture, training of developers, collaboration in shaping software requirements.
3. Platform development. Various modules, ADC, Hardware Abstraction Layer, simplification of the DLT module (design and implementation), design and implementation of a PduR module with additional serial communication capability. Architecture design of the software update function in 2 variants 1 CORE(UNSECURE), 2 CORE(SECURE).
4. Design and development of RGB control backlight devices from Texas Instruments (TLC6C5724) Successfully nominated.

Project Specific: Communication, leadership, and training of developers in different time zones. Hardware: Infineon Traveo II

## SOFTWARE ARCHITECT FOR SANDEN INTERNATIONAL EUROPE IN BAD-NEUHEIM

06.2022 – 10.2022 Task: Changes to the work product according to ASPICE 2.5. First version of "configuration files" and new generation of the application code of the corrected software implementation parallel diagnosis. Final version without errors and complete documentation. Creating the VECTOR configuration files from the existing automatically generated source code. Diagnostic requests from the TESTER to the auxiliary heater. The CCU forwards the diagnostic requests of the auxiliary heater via SRP\_S1\_ACH message on H-CAN / V-CAN. The CCU must not stop the diagnostic services (crash) when parallel diagnostics are performed. The CCU performs diagnostic requests from the TESTER in parallel to the auxiliary heater. Tooling: Enterprise Architect, Vector Davinci Configurator, MPC 560 Compiler, Vector Canoe.

### Technologies, Tools, and Methodologies Used

Vector Informatik Davinci Configurator, Davinci Developer

Own Tasks and Role in Project:

1. Modification of hardware design, software architecture, implementation of the change in the software was made and implemented in a finished Sanden product at the customer.

## SOFTWARE ARCHITECT ASIL-B CONTINENTAL FRANKFURT

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10.2021 – 03.2022 Task: Development of a driver for CUS3 Ultrasonic Sensor System (Continental Ultrasonic Sensor Gen. 3) Different SW modules were developed, coding, tests. For all modules, SW Requirements Specification (SRS) and SW Architecture Document (SWAD), I designed.

SW Module Requirements Specification (MRS).

More details in the following milestones: Analysis of module-specific contents from SRS / SWAD, SW requirements were designed, SW MRS based on CUS3 Template. Connection SRS (Software Requirement Specification) / SWAD (Software Application design) using Doors NG Tools, Review of MRS document. Design of SW Module Detail Design Document (MDD) More details in the following milestones:

Analysis of module-specific contents SRS / SWAD, Refinement / Design of SW detail design (high level, detail level), SW MDD based on CUS3 Template with description of Module Architecture, Integration Manual, Required Interfaces and Module Documentation in doxygen. Implementation of Embedded SW Module in C. More details in the following milestones: Design / Implementation functions with additional corresponding doxygen Template. Source Coding, Static Test, Test of source code in Embedded environment. GIT as Development Version Control.

### Technologies, Tools, and Methodologies Used

Git, Confluence tool, CMake, Programming Language C

Own Tasks and Role in Project

1. Detail design and development of an ultrasonic sensor module application for the rear of the car. Development of the MCAL layer and hardware abstraction layer in C. Design and creation of the CMake toolchain to compile this application. Additionally, designing the necessary software requirements, architecture, detail design, implementation of source code, and unit tests.

## SOFTWARE ARCHITECT ASIL-D HELLA IN LIPPSTADT

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09.2021 – 05.2022 Task: AUDI DC DC designing of a connected with requirements in DOORS from SW architecture and module design conform ASPICE 2.1 with Rhapsody as input for Da Vinci Configurator and Da Vinci Developer. Project AUDI DC/DC 48 V 2.5, Development of software architecture, fulfillment of all ISO 26262 requirements up to ASIL D (All safety tables of ISO applicable to software architecture must be considered), Static & dynamic architecture, Timing behavior of safety-relevant paths, Including traceability to software requirements, Handling of interaction with system architecture, Simulation of architecture according to ISO 26262, Interaction with AUTOSAR modeling and 3rd Party SW, Interaction with detailed SW design (handwritten & Matlab/Simulink/TargetLink-based). Tooling: IBM Rhapsody, Acceptance Criteria: Review completed at Hella (including Hella Safety and Hella QA).

### Technologies, Tools, and Methodologies Used

IBM Rhapsody, DOORS, IBM MKS, FUSI-Standard ISO 26262, Safety Relevant Project, Vector Informatik, Davinci Developer

Own Tasks and Role in Project

1. Designing the software architecture and detail design for a light application at the front of the car in AUDI project in collaboration with FUSI manager (26262).

Project was successfully nominated

## SOFTWARE ARCHITECT ASIL-D CONTINENTAL BABBENHAUSEN BMW GEN5

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12.2019-06.2020 Task 1: Design of the FPD Architecture, BMW term for diagnostic stack on Embedded Linux System. Not only was the architecture designed, but it was also implemented by development teams, whose developments in turn were led and supported by me. The architecture was designed with Enterprise Architect. Task 2: Designing the architecture for Security Concept for Instrument Cluster from Continental. The environment was a SCRUM-based team-oriented work. Programming C++. File System, Version Control GIT, placed on Conti and BMW online platforms. The hardware is a composition of a graphics processor and Renesas µController. The software: A highly extended AUTOSAR system and Embedded Linux. The architecture was designed with Enterprise Architect.

### Technologies, Tools, and Methodologies Used

IBM Rhapsody, MKS, Green hills Compiler, Agile Process with Sprints

Own Tasks and Role in Project

1. Designing the software architecture, detail design, coach implementation of developers team in Portugal for "Feature Protocol Dispatcher".
2. Implementation adaptation of the software based on the live management of FPD
3. Designing the architecture, detail design, for an AUTOSAR security module and integration of a 3rd party encryption module, based on TARA requirements.

Project was successfully nominated

## SOFTWARE ARCHITECT ASIL-C VALEO PEIKER TELEMATICS

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10.2017-12.2019 Project: Application + Module AUTOSAR Adaptive R17-10

Programming Languages: C (Renesas Micro Controller) and C++ under Linux embedded (NAD-microprocessor 2 cores)

Task: Evaluation Project in Adaptive AUTOSAR Technologies, Adaptive Services Adaptive Function, Adaptive APIs in the

Valeo-Peiker Telematics Module. Feasibility Research Evaluation. Development methods and procedures were defined to be able to develop Valeo-Peiker Telematics software based on AUTOSAR Adaptive on Linux-Embedded Systems. A complete implementation manual was created. Also, a Valeo-Peiker project was compiled as a preliminary development project for future Valeo-Peiker Telematics applications based on AUTOSAR Adaptive with COM, DIAG, ARA-API/EXEC, REST, APD-Services and functions. YOCTO Project was used as build environment to build the sources of the project, including Embedded Linux System (C++). For the SRC, AUTOSAR generators were applied (specified by AUTOSAR consortium). From 07.2018-12.2019 Software Engineer, Software Architect for Valeo Peiker Telematics, Project: RNMA (Renault Nissan Mitsubishi Alliance) IVC1 and IVC2, Components: FOTA (Firmware Over The Air), Somelp Modem internal Status and ENDS (Ethernet Network Design Specification) with Somelp, Dolp, Telematics + Automotive Project. Tasks: Software Architecture for FOTA dependent on RNMA requirements. Service responsible for "Modem Status Management" with Somelp over Ethernet. Service responsible for ENDS component as Lead responsible for design and implementation dependent on RNMA requirements. Operating System: Embedded-Linux for Telematics-ECU, OSEC-AUTOSAR 4.2 for the MCU, Hardware: NAD 9x28 Qualcomm as Telematics-TCU and Renesas RH850 F1KM-S4 MCU µC. Bus and Communication: CAN-V, CAN-M, USB, ETH, SPI (RH850<->NAD), WLAN, LAN, BT Tooling: Enterprise Architect (v.13), DOORS, Core-ALM (Version Control, Documentation, Monitoring)

#### **Technologies, Tools, and Methodologies Used**

Enterprise Architect for the architecture, coordination with international team in Romania, Czech Republic, Germany Own Tasks and Role in Project

1. Designing the software architecture for telematics module (Valeo-Peiker) AUTOSAR classic
2. Migrating the Valeo Peiker Telematics Module Project from AUTOSAR Classic to AUTOSAR Adaptive in Version R2017.

AUTOSAR Classic version of the software was nominated

### **SOFTWARE ARCHITECT ASIL-D GENERIC ARCHITECTURE CONTINENTAL NUREMBERG**

10.2016-12.2017 Automotive Project: BR223 (eSuspension- Daimler)

Safety: ASIL-C, Tasks: Creation and collaboration of software architecture for Data Model/Communication between components through RTE, BSW + SWC. Component for Timing, Configuration for SW Memory Mappings, Components and Feature List Compilation, Hardware: Aurix TC 27x (Infineon) 1xFlexRay, 4xPSI5 v2.1, 4xPSI5 v1.3, 1xADC for pressure measurement, 4xCAN, Operating System: OSEK-OS, AUTOSAR 3.2, 4.1-4.2, Tools: Rhapsody 8.3, DOORS 9.5, PTC Integrity Client 10 (MKS). Version control: PTC Integrity Client 10 as Version Control and Document Management. Bus: CAN-Bus, FlexRay, SPI, PWM for control and querying of sensor values (active, passive).

From 04.2017 to 12.2017 Software Engineer, Software Architect for generic architecture at Continental. Automotive Project: 3KPlus (Porsche Panamera) Safety: ASIL-D, AUTOSAR 3.2.2 Tasks: Architecture Rhapsody Model BSW and SWCs, Analysis of Data Communication between Components through RTE Timing Configuration, SW Memory Mappings, SW Component and feature List, Analyze Stakeholder Requirements for Diagnosis Development of Architecture for ERH (Error Handler ASIL-D) Development of Architecture for SysStateHdl (System State Handler ASIL-D) Development of Architecture for Odm with AUTOSAR v3.2.2 (Operation Data Monitor QM) Hardware: Aurix TC297 (Infineon 8MB, 300MHz) HAWS (Hydraulic Roll Stabilization (Hydraulics Wanken Stabilizer)), 1xFlexray, 8xPSI5 v1.3, 1xCAN, 4xSENT, 4xPWM, 2xLin, 6x Air Suspension Valve for spring rate ctrl, 1x Ambient Valve, 4x Damper Valve for vertical dynamic control Tools: IBM Rhapsody 8.0.4, Enterprise Architect v10, IMS-Versioning, Development Tools CATCH Control & CESSAR, Vector Candela Studio 8.5 for diagnosis, Inchron for timing simulations and log analyses, AUTOSAR Builder 2017 x64 for designing AUTOSAR configuration files used for source generation.

#### **Technologies, Tools, and Methodologies Used**

IBM Rhapsody, typical V-Model process, Inchron tool.

Own Tasks and Role in Project

1. Creation and collaboration of the already existing software architecture for Data Model/Communication between components through RTE, BSW + SWC. Project was nominated

### **SOFTWARE ARCHITECT ASIL-C WITH FUSI GENERIC HELLA LIPPSTADT**

06.2015-08.2016 Design, development of the generic software architecture with functional safety of a light control unit.

Tasks: Creation and collaboration of generic architecture for WDG, Renesas F1M/F1H on AUTOSAR 4.x, based on existing architecture for AUTOSAR 3.2 with FUSI. System Behavioral: Watchdog Conception (External Watchdog on SBC), (Cyclic-Wakeup) and concepts for multicore environment. Development of concepts (System Integrity, SSI, System Behavioral) Adaptation/Update from AUTOSAR 3.2 to AUTOSAR 4.x, Creation and collaboration of a generic architecture for AUTOSAR 4.x in the area of SSI-1 (RamTst/FlashTst, ECC, DataROM, MPU) with FUSI and concepts for multicore environment. Creation and collaboration of a generic architecture for AUTOSAR 4.x in the area of SSI-2 (CPU-Core, INT/Exception, DMA, µC Mode-Manager) with FUSI and concepts for multicore environment. Creation and collaboration of a generic architecture for AUTOSAR 4.x in the area of SSI-3 (Error Handler, PWR-Supply, Clock (PLL) with FUSI and concepts for multicore environment. Hardware: Microcontroller RH 850/F1M/F1H/F1K from Renesas, Microcontroller AURIX - Infineon. Technology: ISO 26262 Standard, "Road Vehicle – Functional Safety" Operating System: OSEK-OS, AUTOSAR 3.2, 4.x Tooling: Rhapsody 8.3, DOORS 9.5, PTC Integrity Client 10 (MKS) Version control: PTC Integrity Client 10 (formerly MKS) as Version Control and Document Management. Bus: CAN-Bus, LIN-Bus. The results of the tasks were entered in DOORS with consideration of SEooC and linked accordingly to subsequently achieve the evaluation ASIL-B classification.

#### **Technologies, Tools, and Methodologies Used**

IBM Rhapsody, DOORS, IBM MKS, FUSI-Standard ISO 26262, Functional Safety Relevant Project, Vector Informatik, Davinci Developer



#### Own Tasks and Role in Project

1. Designing the generic software architecture and detail design for a light application at the front of the car in AUDI project in collaboration with FUSI manager (26262).

Project was successfully nominated

### SOFTWARE ARCHITECT ASIL-C WITH FUSI & SECURITY CONTINENTAL MARKDORF

09.2014-06.2015 Design, development, and introduction of software for the functional safety of a control unit in an AUDI. Tasks: Architecture, design, development, and programming, unit and integration test for the following technically safety relevant ASIL-B modules: E2E, Safe RTE, MPU ("Memory Protection Unit" with hardware support) and MPU driver, Fsm (Functional Safety Manager SW), Safe WatchDog, Based on AUTOSAR V4.0 specification. Hardware: Microcontroller RH 850/F1L and RH850/F1M from Renesas. Technologies: ISO 26262 Standard, "Road Vehicle, Functional Safety" Programming languages: C Operating System: OSEK-OS Tools: Eclipse development environment for programming, Cesar and Spark configuration and generator tool. Green Hills Compiler. SWATT Tool for unit tests and test specification. IBM Rational Rhapsody in Version V8.6.0 for the creation of architecture and design. WinIDEA Version 9.12.224 as debugger/emulator. Rhapsody Gateway for export of architecture to DOORS and traceability. DOORS V. 9.6.3 for software architecture and software detail design documentation. Canoe V. 8.2 for investigations, verification of functionality and rest bus simulation. Version control: IMS (MKS) System as version control and source code management. Bus: CAN-Bus The tasks were oriented and solved in accordance with functional safety measures described in Technical Safety Concept (TSC in DOORS) in accordance with specification in DOORS (requirements). The results of the tasks were entered in Safety Case document to subsequently achieve the evaluation and ASIL-B classification. The software was successfully integrated in May 2015 and handed over to AUDI.

#### Technologies, Tools, and Methodologies Used

IBM Rhapsody, DOORS, IBM MKS, FUSI-Standard ISO 26262, Safety Relevant Project

#### Own Tasks and Role in Project

1. Designing the generic software architecture and detail design for a light application at the front of the car in AUDI rear lights project in collaboration with FUSI manager (26262).
2. Development of the architecture, detail design, implementation MPU (Memory Protection Unit) based on ISO 26262. Additionally, development of unit tests and designing and implementation of injection tests into MPU from outside (hardware involved in the implementation SPI line, SPI external devices to infiltrate and compromise the MPU).

Project was successfully nominated

### SOFTWARE ENGINEER MAGNA ELECTRONICS BABBENHAUSEN

06.2012-03.2014 Software development of the application, RTE layer, driver layer for application video surround system with multi-camera function for FORD. Programming languages: Standard C, also with C99 extension dialect for MPC56... series microcontroller, with Green Hills Compiler. Tasks: Development of diagnostic module and control through execution of routines, Voltage Range Monitor module, Trailer Aid Control module, Trailer Aid Backup module, with development of FPGA manager, SPI module, Signal Manager, development of self-test module and others. AUTOSAR 3.2 was used as a basic prerequisite and the developments of the modules were directed accordingly. Furthermore, debug tasks, many analyses, error correction and quality improvement were carried out. Numerous FORD requirements were analyzed, conflicts were identified, changes were proposed and then requirement conflicts were resolved through software implementations. In the architecture phase in V Model, I very often participated in meetings and analyses with FORD. Multiple oscilloscope signal analyses were performed and documented. In December 2012, I completed training for Zynq systems at Xilinx as a ZYNQ Software Designer. Tools: Eclipse development environment with C compiler from Green Hills, WinIDEA was used for debugging purposes. Canoe, Vector Informatik 8.0 for rest bus simulation CAN, Canoe 8.1 with LIN option. Diagnostic Engineering Tool from FORD. Video grabber software, MKS system as version control and source code management.

#### Technologies, Tools, and Methodologies Used

Eclipse, C for development, Xilinx Toolchain for FPGA configuration, Green Hills Compiler.

#### Own Tasks and Role in Project

1. Development of software modules such as FPGA manager, SPI MANAGER, Diagnosis Stack, was manually implemented and not generated.
2. Development of TAD (Trailer Aid System) as SWC application on the RTE layer.
3. As main developer, I also had the task of testing, configuring, and integrating the software in the car at the customer's site in the USA (Ford)

Project was successfully nominated

### SOFTWARE ENGINEER MAYSER GMBH & CO. KG

01.2012-05.2012 Software development sensor application for power gate system in General Motors cars. Task: Development of the application based on the HALL principle, control, LIN driver with EEPROM memory function. Development of LIN J2602 driver, Rest Bus Simulation for control, logging of sensor behavior and properties.

#### Technologies, Tools, and Methodologies Used

Programming languages: Standard C for MSP430 microcontroller, IAR development environment for software, Canoe, Vector Informatik and CAPL programming for Canoe and Canister.

#### Own Tasks and Role in Project

1. Development of ECU software based on LIN Protocol for a Ford project to control a motorized trunk.

## SOFTWARE ENGINEER HYDRO BUILDING SYSTEMS

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11.2009-01.2012 Software development in 3D area. C++ further development of the WICTOP software. Analysis, design, conception, development, and testing up to introduction at customers. Task: Dynamic dimensioning, intelligent articles. Development of own STEP file importer in WICTOP internal format and rendering in 2D(GDI) and 3D(OpenGL). Programming languages: Windows Forms in C++ and C# Database: Fast Objects from Versant-Version 11 Technologies: OpenGL on Windows-Forms and MFC-Forms, Open-Cascade was used as framework to support the importer. Platform: PC with Windows 7, Windows XP.

### Technologies, Tools, and Methodologies Used

Windows System and Visual Studio

Own Tasks and Role in Project

1. Software development in 3D area. C++ further development of the WICTOP software  
Project was ready at the customer

## SOFTWARE ENGINEER HARMAN BECKER ULM

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02.2007-04.2009 Software development in platform infotainment area C++. I have successfully developed a "Data Base Stack Server" based on SQLite. Loading and storing and loading of Data Lists, in and from Head Unit and Mobile Phone. Development of A2DP (AVRCP V1.0-V1.4) A controller between Bluetooth Service and QNX Multimedia Engine. Microprocessor was SH4, ARM, WINDOWS, ARIS. Operating system: QNX V4. Customer: BMW, Audi, VW, Porsche, Mercedes in their infotainment systems. 10.2008-04.2009 I have also successfully developed a Multimedia Engine in QNX responsible for communication between QNX Multimedia Engine and mobile phone connected via Bluetooth.

### Technologies, Tools, and Methodologies Used

Eclipse C++, MKS, V-Model Process

Own Tasks and Role in Project

1. Development of the diagnostic stack as SWC application under QNX platform for the Head Unit.
2. Development of the multimedia manager in the QNX platform and communication stacks

## SOFTWARE ENGINEER PARTNER ENTREPRENEUR SERVICE TRACE DARMSTADT

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09.2004-02.2007 Web Server Design and Development, Windows, Web Client Design and Development (Platform independent) Service and Object Oriented Reporting System: Crystal Reports and Microsoft Reporting Software development of Service trace in Darmstadt. Task: Development of client-server software system to optimize IT infrastructure and performance Technologies: Web Server Design and Development, Windows Server, Web Client Design and Development (Platform independent), Service and Object Oriented. Introduction at customers: TSystems-Bamberg, NEXIO-Mainz, Entega-Darmstadt, etc. Design Tools: Visio-UML, Enterprise Architect 4-UML. Development Tools: MS Visual Studio 2003, 2005. Programming: C++, C#, ASP.NET, SQL (2003, 2005), WCF, WPF, XML-Patterns, JavaScript and Ajax (MS) components. System: IIS, .NET, MSSQL-Server, TCP/IP, XML. AutoIT.

### Technologies, Tools, and Methodologies Used

Many tools in different programming languages, SQL and other frameworks

Own Tasks and Role in Project

1. Developing a control system for observing, monitoring, reporting to managers of network activities.

## SOFTWARE ENGINEER SCHULER HI-CAD SYSTEMS DARMSTADT

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05.2000-12.2003 Task: Conception, design, development, testing, deployment, and support of software components under Windows as part of the Schuler hi-cad Systems complete solution. Independent creation of interface modules for commercial application programs under Windows. Analysis, synthesis and implementation of the development of projects for data exchange between multiple software products and software companies. Commissioning at the customer. Testing, training of users and administrators. Development of components in the B2B area and deployment of XML documents as a medium for data exchange. Design and implementation of the Windows interface in the Windows area, for example Registry, Multithreading, MSMQ-Access (MDB), DB, MSSQL. Analysis, conception, development of a client-server system. Introduction of BMECAT as a medium in projects for data exchange. Development of programming modules for database conversion to EPL and PPS. Research for solutions and conversions of an application, transition to the Internet. Programs: Delphi, C++, JavaScript, XML, MSSQLServer7, VB-Script, HTML, DHTML, ACCESS Database: MSSQL Server7, MS DBASE, Paradox, Text DB.

### Technologies, Tools, and Methodologies Used

Visual Studio, multiple tools

Own Tasks and Role in Project

1. Software developer for HI-CAD application

## SOFTWARE ENGINEER INSTITUTE FOR BUSINESS RESEARCH IN FÜRTH/NUREMBERG

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08.1998-05.2000 Task: Conception, analysis, design, implementation, development, testing, introduction, training, support of the application, scheduling for therapists, doctors, patients, and rooms for German hospitals. Dialogs for controlling the application scheduling. Project tasks: Data transmission conception, analysis, design and implementation of the development, testing, introduction, training, support of the application Data transmission and billing according to § 302 SGB V for German hospitals and the application Data transmission and billing according to § 301 SGB V for German

hospitals. Design and implementation of the development of components and interfaces for controlling the application "Data transmission health insurance-hospital. Design and implementation of the development of tools and modules for master data collection. Archiving of data sets within the framework of the IFU complete solution. Adaptation of the programs and development to obtain approval for nationwide use of the software. Operating systems: Windows 98, Windows NT Programming: Delphi, C++ Databases: BTRIEVE 4. Data exchange with text format.

#### **Technologies, Tools, and Methodologies Used**

Delphi

Own Tasks and Role in Project

1. Dialog developer for health system in hospital.

#### **EDUCATION, TRAINING**

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2012 Training Zynq-7000 Software Designer

1994 Study Programmer Darmstadt. Thesis on a case study for dynamic data structures text processing, graphics, and functions.

1992-1994 Study Computer Science Hagen (Interrupted 2 years)

1981-1986 Study, Degree Dipl. Eng. for Transport and Agricultural Machines in Mechanics and Electrical Engineering in Tirana / Albania