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**Software
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Development Driving Assistants

<p>since 2016 (ongoing projects) BMW M GmbH, Munich</p>	<ul style="list-style-type: none">• project architecture• communication and component architecture• hardware/software gateways (Gateway, CAN, Flexray, Most etc.)• platform independent communication framework (“GWNG connector”)• offline test environment• development and administration of the official development environment• management and administration of management tools <p>Languages: C++11, C++14, C#, Java, bash, PowerShell Tools: Visual Studio, Eclipse, Git/Gerrit, Atlassian Crowd, Confluence, Jira, VMWare Player/Workstation, Microsoft Office, Remote Desktop, VPN, Raspberry Pi, Matlab, AUTOSAR, Unity Platforms: Ubuntu Linux 16.04 LTS, Windows 7/10, Windows Server, Raspberry Pi, ROS, Android, iOS</p>
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Highly automated driving, development from scratch to pre-production

<p>2012 - 2017 BMW Forschung, Munich</p>	<p>Based on the ROS communications framework a highly automated (self-) driving vehicle is being developed from scratch to pre-production.</p> <ul style="list-style-type: none">• project architecture• communication and component architecture• hardware/software gateways (ZGW-Gateway, CAN, Flexray, Most etc.)• controller and information components (environment model, vehicle model, etc.)• responsibility data flow• offline test environment• development and administration of the official development environment• management and administration of management tools <p>Languages: C++11, C#, bash Tools: Eclipse, Git/Gerrit, Atlassian Crowd, Confluence, Jira, VMWare Player/Workstation, Windows 7, Microsoft Office, Remote Desktop, VPN Platforms: Ubuntu Linux 12.04 LTS, Ubuntu Linux 14.04, Windows 7, Raspberry Pi, ROS Groovy, ROS Hydro, ROS Indigo</p>
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Network administration and support / Honorary (unpaid) job

2002 - 2014 Haus International, Landshut	<ul style="list-style-type: none">• Set up and maintenance of the internal network for a personnel of 15 people• Set up and maintenance of all participating hardware (computers, servers) and software, including 25 schooling computers• Phone support for all occurring hard- and software issues <p>Languages: C#, .NET, Batch, VBScript Tools: Windows 2003 SBS, Exchange 2003, Microsoft Office, Microsoft Outlook, Remote Desktop, VNC, VMWare Server Operating systems: Windows XP, Windows 7</p>
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Implementation of new concepts for a maintenance management system

2011 - 2012 BMW UX, Munich	<p>The existing maintenance management system AW-RS has been expanded with</p> <ul style="list-style-type: none">• a new reusable container object „Tätigkeit“ (activity),• and (in some sections) a completely new user interface marking the transition between terminal based (keyboard focused) concepts to more informative and self-explanatory user interface concepts. <p>Due to very rudimentary existing documentation a lot of very detailed analysis of existing source code and data has been necessary.</p> <p>Language: C#, PL-SQL Tools: Microsoft Office, Microsoft Visual Studio 2008, Araxis Merge, Subversion, Oracle 11, Toad, Tora, Quest SQL-Optimizer Operating Systems: Windows XP</p>
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Calibration software for airplane power engine (jet) adapters

2008 - 2012 MTU, Munich	<ul style="list-style-type: none">• Managing and calibrating software,• software and hardware test tools,• and adapter firmware <p>have to be designed, developed and/or customized.</p> <p>Development follows the DO 178 B / DO 254 standard.</p> <p>Language: C, C#, .NET, C++ CLI, Spring.NET, Python Tools: Microsoft Office, Dimensions, Requisite Pro, mantis, Softools, Microsoft Visual Studio 2008, Visual Studio 2010, Araxis Merge, Subversion Operating Systems: Windows XP</p>
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Software library for automatic power engine adapter tests

2011 MTU, Munich	<ul style="list-style-type: none">• Analysis of existing test scripts in an automatic test environment for hardware and software tests• Extraction of base functionality as a reusable well-documented library• Implementation of tests as test scripts using the library <p>Development follows the DO 178 B / DO 254 standard.</p> <p>Language: Python Tools: Microsoft Office, Dimensions, Perl, Araxis Merge, Subversion Operating Systems: Windows XP</p>
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Core Software for Maintenance Simulation of the Tiger Helicopter

2005 - 2008 EADS, Ottobrunn	<p>The goal is an event-based simulation software core. Objectives are design and implementation of all different parts of the software, as well as tools for test and implementation.</p> <p>In addition, a webserver for communication and support will be set up, and a bug tracking system maintained.</p> <p>Language: C++, C#, .NET Tools: Microsoft Visual Studio 2003, Visual Studio 2005, Borland Together, Microsoft Office, Bugzilla, VSS, Subversion, Apache Operating Systems: Microsoft Windows 2000, Windows XP, Windows 2000/2003 Server</p>
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Maintenance of the radiography digitizers CR25.0 and CR75.0 and development of CR35.0 and CR85.0

2005 - 2007 AGFA-Gevaert AG, Munich	<ul style="list-style-type: none">• Design and implementation of new features• Fault repair and bugfixing• Documentations• Support (including phone support) <p>Language: C (DIAB-Compiler), Perl, Shell-Scripts, CLIPS (Expert system) Tools: Microsoft Office Operating Systems: Portex (VRTX), Sun OS, Microsoft Windows 2000</p>
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Design, implementation and documentation of firmware including user and web interface for a new generation of radiography digitizers (CR25.0); extension and redesign of the expert system for diagnosis

2003 - 2005 AGFA-Gevaert AG, Munich	<p>Goal is the combination and consolidation of two machine generations and at the same time the change to a new processor type (PowerPC, Ariel- and Oberon-Board). The main part is design and implementation of new features.</p> <p>The self diagnostic system of the machine will be completely revised.</p> <p>Language: C (DIAB-Compiler), Perl, Shell-Scripts, CLIPS (expert system) Operating Systems: Portex (VRTX), Sun OS, Microsoft Windows 2000</p>
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Installation Analysis

2004 AGFA-Gevaert AG, Munich	<p>Aim of the analysis was an evaluation of changes on the target system of a software installation, especially changes in the environment of already installed software.</p> <p>All changes in the registry, the file systems and in single files, and, if necessary, changes in hard disk boot records have been recorded and analyzed.</p> <p>An evaluation was done in several steps because of the amount of requirements needed for the software to be installed (new Internet Explorer, .NET-Framework, Visual J++, WMI...).</p> <p>Tools: Araxis Merge, lots of concentration Operating Systems: Windows NT Server 4.0</p>
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Extension and refining of ActiveX (OCX) Controls for a touchscreen user interface

2003 Siemens AG, Munich	<ul style="list-style-type: none">• Context help• central framework control center for colors, sizes, labels, fonts)• all controls can be used with Visual Basic, Visual C++ (all environments that support ActiveX) <p>In addition all standard Windows 2000 controls have been wrapped to support Unicode controls with Visual Basic. These controls are used in the non-touchscreen version of the software product.</p> <p>Language: C++ Tools: MFC, ATL Operating Systems: Microsoft Windows NT, 2000</p>
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Development, documentation and analysis for Eurofighter Ground Loading Station

2001 - 2003 EADS, Ottobrunn	<ul style="list-style-type: none">• Interface Hard/Software• Subsystem responsibility• Software tool for query management <p>Language: C++, MFC Tools: Doors, Office, Visual C++, Visual Studio .NET Operating Systems: Microsoft Windows NT/2000</p>
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Installation routine for robot control software

2002 EADS, Ottobrunn	<ul style="list-style-type: none">• User account creation and management• User rights• Software installation <p>Language: Shellscripts, RPM Tools: RPM Operating Systems: Linux</p>
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Set-up of PC training room

<p>2002 Bavarian State Library, Munich</p>	<ul style="list-style-type: none">• Hard- and Software setup• Network setup (Domain-, Internet-, Mail-, User management)• Management Software• Administration Tools• Automatic recovery and re-establishment of technical environments <p>This system allows unattended recovery and re-establishment of 40 PCs to defined original state (complete with installed software, for instance a customized Microsoft Office package) with single press of a button in 15 Minutes. In addition, user data can be reset to original state.</p> <p>The PCs have been included (with reduced access) into the library network.</p> <p>Language: Visual C++, Skripte Tools: ISA-Server, Exchange, Drive-Image, self written tools, etc. Operating Systems: Windows Server 2000, Windows 2000 Professional</p>
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Administration, maintenance and service of the Prestel publishing house's PC network

<p>1999 - 2002 Prestel Verlag, Munich</p>	<ul style="list-style-type: none">• 30 PCs with Windows NT 4.0, 20 MACs• Administration of Linux Webserver, Linux Oracle DB Server and a Windows NT 4.0 File- and Exchange-Server• Backup Maintenance• Website administration <p>Languages: C++, Batch Tools: Windows NT Server, Exchange, Microsoft Office, Microsoft Outlook, VNC, PC Anywhere Operating Systems: Windows NT Server, Windows NT, Windows 2000, Mac OS</p>
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Extension of the fill level controller for traceability

<p>2000 - 2001 Siemens AG, Munich</p>	<p>In addition to the above mentioned duties data of a belt end recognition system and a mobile scanner unit are managed. Additional viewing and controlling methods have been developed and implemented.</p> <p>Language: C++, XML Tools: MFC, ATL Operating Systems: Microsoft Windows NT/2000</p>
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Design and Implementation of about 20 ActiveX (OCX) Controls for a touchscreen user interface

2000 - 2001 Siemens AG, Munich	<ul style="list-style-type: none">• Implementation from scratch without subclassing windows controls• All control outfit (colors, sizes, labels, fonts) can be changed through a central framework control center• all controls can be used with Visual Basic, Visual C++ (all environments that support ActiveX) <p>In addition all standard Windows 2000 controls have been wrapped to support Unicode controls with Visual Basic. These controls are used in the non-touchscreen version of the software product.</p> <p>Language: C++ Tools: MFC, ATL Operating Systems: Microsoft Windows NT, 2000</p>
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Design and implementation of a website (including eCommerce), author accounting software, title database, invoice software

1999 - 2001 Prestel Verlag, Munich	<ul style="list-style-type: none">• Website design and implementation using Java servlets on Linux with Apache SSL server• online ordering system (Webshop)• the software was designed and programmed with Java to run under NT and Macintosh) <p>Languages: HTML, C++, Java, JavaScript, Shell Skript Databases: Oracle 8i, Yard Operating Systems: Microsoft Windows NT, Linux/UNIX</p>
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Software Trace System

1999 - 2001 Bachmayer GmbH, Landshut (for different customers: Siemens, HP...)	<p>Multihost controlling and tracing respectively logging of process information</p> <p>Language: C, C++ Tools: MFC, ATL Operating Systems: Microsoft Windows 95/98/NT/2000, UNIX/Linux</p>
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Fill level controller for Siemens electronic assembly machines

1999 - 2000 Siemens AG, Munich	<p>Fill level calculation through statistics over the machine's production data. Warning or power off mechanisms derived through rules according to that data.</p> <p>The software has been implemented using client/server technique, the server being a service and the client an ActiveX control.</p> <p>Language: C++ Tools: MFC, ATL Operating Systems: Microsoft Windows NT/2000</p>
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Design and Implementation of a faxing tool

1999 - 2000, 2001 Bachmayer GmbH, Landshut	<ul style="list-style-type: none">• A fax receiver receiving with CAPI 2.0, forwarding to email boxes or printing directly.• An OCX fax viewer to comfortably view, zoom, rotate, print and manage received faxes for example inside Outlook, or on a web page. <p>Languages: C++, Java, Javascript, HTML Tools: MFC, ATL Connection to Mailserver via RFC 821+822 SMTP protocol Other APIs: CAPI 2.0, Outlook/Exchange Operating Systems: Microsoft Windows 95/98/NT/2000</p>
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Remote Administration Service

1999 Outsourcing Division of the Hewlett Packard GmbH	<p>Conception and implementation of service that allows remote</p> <ul style="list-style-type: none">• controlling of other services• access to system resources• implementation of a time scheduler• send message to other services in case of blackouts or breakdown <p>This service has been used to automatically restart other services that are likely to stop working, and, if that was not possible, it tried to reboot the machine following certain rules.</p> <p>Languages: C, C++ Operating Systems: Microsoft Windows NT, HP-UX 10.20</p>
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Backup-Tools

1998 - 1999 Outsourcing Division of the Hewlett Packard GmbH	<ul style="list-style-type: none">• Conception and implementation of scripts to manage backups and backup media (changing robots and libraries etc.)• Control of different backup software systems through parameters (e.g. HP OmniBack, Seagate Backup Exec) <p>Languages: Perl, C, C++ Backup-Software: HP OmniBack, Seagate Backup Exec Operating Systems: Microsoft Windows NT, HP-UX 10.20</p>
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SITEST HS 50 (Setup and maintenance user interface for Siemens electronic assembly machines)

1997 - 1998 Siemens AG, Munich	<ul style="list-style-type: none">• Conception and design of the new user interface and functionality• Software port from older machine generations and implementations• Implementation of new features <p>Language: C++ Tools: MFC, ATL Operating Systems: Microsoft Windows NT, RMOS 3</p>
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SITEST 403/404 (Setup and maintenance user interface for Siemens electronic assembly machines)

1997 - 1998 Siemens AG, Munich	<ul style="list-style-type: none">• Software port from older machine generations• Implementation of new features that extend user interface functionality <p>Language: C++ Tools: MFC, ATL Operating Systems: Microsoft Windows NT</p>
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Operating data registration and control

1997 Kratzer Automatisierung GmbH, Unterschleißheim, Munich	Registration and control of inventory and production data during production Languages: Java, Visual Basic Database: Microsoft Access Operating Systems: Microsoft Windows NT
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Database System for Customer Management and Support

1996-1997 GWMC Wirtschaftsforschung, Passau	Languages: C++, Visual Basic Database: Microsoft Access Tools: MFC Operating Systems: Microsoft Windows 3.11, Windows 95, NT 4.0
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