



**SOFTWARE ARCHITECT**  
**Diplomingenieur Sven Brandau**

## CONTACT

### ADDRESS

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### GULP

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GulpID: 38308

### XING

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Profile: [http://www.xing.com/profile/Sven\\_Brandau/](http://www.xing.com/profile/Sven_Brandau/)

### CHARGE

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Hourly Rate: 80€, negotiable

# VITA

## PERSONAL INFORMATION

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Date and place of birth 01. August 1968 in Berlin

Marital status Married with two children

## WORK EXPERIENCE

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08/2004 to date Research Expert and Consultant  
[Ing. Büro Brandau](#)

08/2003 – 07/2004 *Software Systems Architect*  
[sci-worx GmbH](#)  
Software Engineering Center

10/1997 – 07/2003 *Research associate*  
[Heinrich-Hertz-Institut für Nachrichtentechnik Berlin GmbH](#)  
Image Communication Group

01/1997 – 09/1997 *Research associate*  
[Technical University of Berlin](#)  
Faculty of Electrical Engineering and Computer Sciences

1995 - 1996 *Tutor in course „Signal processing“*  
[Technical University of Berlin](#)  
Faculty of Electrical Engineering and Computer Sciences

1993 - 1996 *Tutor in course „Information technology“*  
[Technical University of Berlin](#)  
Faculty of Electrical Engineering and Computer Sciences

1988 - 1989 *Instrument Mechanic*  
Luftechnische Anlagen (Ventilation Systems) Berlin

## EDUCATION

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1990 - 1996 *Dip. Ing. Elektrotechnik (Master of Science)*  
[Technical University of Berlin](#)  
Faculty of Electrical Engineering and Computer Sciences  
Final grade: "Very good" as Dipl. Ing. (Master of Science)

1987 - 1989 *Abitur*  
Evening college Berlin-Friedrichshain  
Final grade: Abitur (High school)

1985 - 1988 *Apprenticeship as Instrument Mechanic*  
Luftechnische Anlagen (Ventilation Systems) Berlin

1975 - 1985 *Polytechnic Secondary School*  
11. POS Berlin Friedrichshain

# PROJECTS

## Projects

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03.2008 – to date

*NGN - New Generation Networks / VoIP*

- Implementations of different features for a VoIP server (Soft-PBX)
- Services: lawful interception, parallel ringing, serial ringing, music on hold
- Working on change requests and error corrections

Coding language: C/C++

Environment: Solaris, Linux, ClearCase, ClearQuest

Protocols: SIP, RTP, 3GPP IMS, Mobile Centrix

02.2008 – 05.2008

*Video telephony (H.324M) with Asterisk*

- Implementations for Asterisk-PBX for H.324M
- Error correction of the Asterisk H.324M stack
- Delivering of patches for the Fontventa H.324M stack
- Test with Nokia N73 und Motorola K3

Coding language: C, Java, perl

Environment: Linux, gcc, Eclipse, svn

02.2008 – 05.2008

*System architecture for IPTV*

- Develop of different system architectures for a IPTV-system.
- Description of client architecture and back end architecture (CMS) and CDN (Content-Delivering-Network).
- Evaluation of different IPTV techniques: Multicast, Unicast, Peer-2-Peer.
- Evaluation of different IPTV platforms: Microsoft Windows Media / MSTV, Adobe Flash, RealNetworks

Systems engineering project

07.2007 – 11.2007

*Implementations for a Document-Verification-System*

- Programming of a GUI for an image processing framework: GUI-logic, mainframe and several dialogs
- Using of the GUI-frameworks Qt from Trolltech
- Hardware control: Camera, Lights, Positioner
- Data storage in a SQL-data base (MySql)
- Reading of configuration data via DOM XML parser
- Output of statistical data via XML
- Protection of the executable against unauthorized copy via dongle from WiBu-Systems

Coding language: C++

Libraries: Qt 4.3.x (Trolltech), boost

Development: Windows XP, MS Visual Studio 2005

11.2006 – 06.2007

*IMS services*

- Programming of SIP services on the Nokia-Siemens-Networks advantage platform
- Programming of a charging interface in a 3GPP IMS application server / B2B user agent
- Implementation of the test environment for a 3GPP IMS application server/ B2B user agent.

- Parsing of ASN.1 data via Perl script for an automatic documentation generation
- Using of regular expressions in Perl and Java
- Remote debugging with Eclipse (Solaris/Windows XP)

Coding language: Java 1.5 (Java SE 6), Perl  
 Protocols: SIP, ASN.1  
 Development: Solaris 10, Eclipse, codegen

08.2006 – 10.2006

*IMS services in the automotive sector*

- System specification for 3GPP IMS services.
- Evaluation of different services in the automotive sector
- Checking of the services for usability in the 3GPP IMS environment

Systems engineering project

06.2006 – 10.2006

*MPEG-2 Transportstream Multiplexer*

- Design and implementation of the architecture for an MPEG-2 transport stream multiplexer
- Conversion of MPEG-4/AVC or H.264 and AAC-HE
- Test with set top boxes from [Pace](#), [Amino](#) and [Stino](#)

Coding language: C++  
 Tools: VLC, mplayer, MS DirectShow  
 Protocols: MPEG-2 Systems TS  
 Development: MS Visual Studio .Net 2003, cygwin, gcc

04.2006 – 07.2006

*IMS Videosharing/VoIP*

- Devising the use-cases, requirements, specifications and the architecture as well as the implementation of a system for transmission of Realtime-Audio/Video-Streams between mobile cellular devices (full duplex)

Coding language: C++, C, C#, Visual Basic  
 Protocols: 3GPP IMS, IPv6  
 Codecs: Video: MPEG-4, H.264, Audio:AMR, AMR-WB  
 Development: Windows Mobile 5.x, Intel XScale PXA27x

08.2005 – 03.2006

*IMS Services*

- Formulating the system specifications for IMS services.
- Project areas involved Push to Talk, video sharing, Presence and others
- Devising the use-cases, requirements and architecture

Systems engineering project

07.2005 – 07.2005

[AUTOSAR](#)

- Project in the automotive sector: Review of the AUTOSAR specifications and formulating solutions in the AUTOSAR standardization process

Systems engineering project

- 05.2005 – 12.2005      [SigComp \(IETF\)](#)
- Drafting, devising the architecture of and programming the signal compression layer SigComp
  - Implementation in C for an embedded platform
- Coding language: MS Visual Studio 2003
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- 03.2005 – 06.2005      *IMS IP Multimedia Call*
- Designing the architecture for 3GPP IP multimedia calls in IMS
  - Generating call flows, specifying the requirements and formulating the architectural elements for clients in mobile telephony
- Systems engineering project
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- 08.2004 – 06.2005      *Push-to-Talk over Cellular (PoC)*
- Designing the software architecture and preparing drafts for PoC and video streaming in the mobile telephony area of the client site
  - Making design specifications for embedded platforms ([APOXI](#), embedded Linux)
  - Representing the client at the Open Mobile Alliance ([OMA](#))
- Systems engineering project
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- 03.2004 – 07.2004      *IMTC conformance tests*
- Representing the client at the [IMTC](#)
  - Leading and implementing the conformance tests for audio/video codecs and the 3GPP file format in line with the [IMTC](#) set up
  - Generation of test resulting Excel sheets via Perl scripting
- Coding language: C++, C, Perl  
Protocols: Mobile Streaming, Video telephone (H.324M)  
Codecs: Video: MPEG-4, H.263, Audio: AMR, AMR-WB  
Development: MS Visual Studio 2003, Metrowerks  
CodeWarrior, Lauterbach Debugger, ARM
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- 01.2004 – 02.2004      *Protocol Evaluation Project*
- Evaluating various manufacturers of H.324M and RTP/RTSP protocol stacks
- Systems engineering project
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- 08.2003 – 12.2003      *Multimedia framework for mobile phones*
- Developing the architecture and modules for a middleware multimedia framework (similar to DirectShow) for mobile phones ([Nucleus/APOXI](#))
- Coding language: C++, C  
Protocols: 3GPP Fileformat  
Development: Metrowerks CodeWarrior, Lauterbach Debugger, ARM

- 07.2001 – 07.2003      *Transmission of multimedia data over mobile networks*
- Setting up and developing a simulation environment for optimized transmission of video data using EGPRS and WLAN
  - Generation of test resulting Excel sheets via Perl scripting
- Coding language: C++, Perl  
 Protocols: RTP, UDP, IP, EGPRS and IEEE 802.11b  
 Codecs: MPEG-4 and H.264 (AVC)  
 Development: MS Visual Studio, MS Direct Show
- 01.2001 – 06.2001      *MPEG-4 content management*
- Analysis and software development for storing multimedia content in 3GPP/MPEG-4 file format
- Coding language: C++  
 Protocols: MP4 Fileformat  
 Development: MS Visual Studio
- 01.1999 – 12.2000      *Virtual 3-D conferencing systems*
- Developing the fundamentals for future 3-D video conferencing systems using multiple camera systems
- Coding language: C++  
 Development: MS Visual Studio
- 05.1998 – 12.1998      *Workings in standardization of MPEG-4*
- Partly leading the EU-project MoMuSys
  - Developing and implementation of own algorithms for MPEG-4
- Coding language: C  
 Development: Sun Solaris C compiler
- 01.1998 – 04.1998      *Fast motion estimation in MPEG coding*
- Implementing the fast motion estimation in MPEG-2 and MPEG-4 video compression
  - Development in Intel assembler using MMX and SSE extensions
- Coding language: C++, Assembler (Intel x86 – MMX/SSE)  
 Protocols: MPEG-2 / MPEG-4  
 Development: MS Visual Studio, MS macro assembler, nasm
- 01.1997 – 12.1997      *Fractal image coding*
- Developing an image coding system using fractal methods and algorithms
  - Implementation using object oriented methods in C++
- Coding language: C++  
 Development: Sun Solaris C++ compiler

## Patents

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German titles:

- „Kombination von Link-Layer-ARQ und ungleichem Fehlerschutz auf Applikationslayer“ [→](#)
- „Videoübertragung in paketorientierten Netzwerken unter Verwendung eines prioritätsgesteuerten Zwischenspeicher (Priority Buffer)“ (pending)
- „Graphische Bereitstellung von Positionsdaten mehrerer mobiler Endgeräte auf den jeweiligen involvierten Endgeräten“ [→](#)

# SKILLS

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- Mobile networks  
GSM, (E)GPRS, UMTS, CDMA, CDMA2000  
Video telephone (3G-324M)  
MMS, PSC, MBMS  
3GPP IMS (SIP, SDP, SigComp)  
OMA/MENSA Push-To-Talk (PoC)  
IP Multimedia Call (video sharing)  
IMS services  
ASN-1
- Multimedia  
Video: MPEG-4, MPEG-2, MPEG-1, H.264 (AVC), H.263, H.261  
Audio: MPEG-2/4 AAC, MP3, 3GPP AMR/AMR-WB/AMR-WB+  
Multimedia streaming (RTSP, RTP, RTCP, SDP)  
Real streaming media architecture  
Microsoft streaming media architecture  
Voice over IP (VoIP) – SIP/RTP based
- Embedded Systems  
ARM 7/9 CPU, C166 CPU  
Infineon UMTS/GSM/CDMA Plattform (ARM 9 Core)  
Tools: ADS 1.2, RealView  
Debugger: Lauterbach, MultiICE  
Real Time OS: Nucleus, Symbian, OSE, embedded Linux, Windows CE
- Networks  
TCP/IP (TCP/IP: RTP, RTSP, SIP, MSRP, PPPoE)  
Wireless LAN (IEEE 802.11x), Bluetooth
- Internet standards  
HTML, CSS  
PHP  
XML  
JavaScript
- Microprocessors  
ARM 7/9, Intel XScale PXA27x  
Infineon C166  
Intel x86 inkl. MMX, SSE, SSE2, SSE3  
Intel 8051 Family  
Motorola 68K, DSP 56K  
Zilog Z8, Z80  
AT&T DSP 32 Series
- Programming languages  
C/C++  
Java  
C#  
Assembler  
Perl  
PHP  
Visual Basic  
Java  
Matlab  
Pascal
- Libraries  
Qt  
boost  
MFC
- Applications  
Microsoft Office  
Microsoft Outlook

Microsoft Project  
Rational Rose  
Rational Requisite Pro  
Version Control: ClearCase, CVS, SourceSafe

- Operating Systems  
Microsoft Windows (all versions, incl. CE or Windows Mobile)  
UNIX (Linux / Solaris / AIX)  
OS/2  
DOS  
Realtime OS: Nucleus, Symbian, OSE, embedded Linux
- Databases  
SQL conformant databases (MySQL)
- Languages  
English: business fluent  
German: native language

# REFERENCES

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