

Software / Hardware developer

Where “not possible” is no option, where performance and innovation really matter, where you achieve what others couldn't, where Cloud meets Mobile and Embedded – that's the place to be for me.

1 Overview

I'm a passionate software/hardware developer with many years of experience.

The four major areas of my programming expertise are: web-based, desktop, mobile and embedded programming. There is also a fifth area: in-depth knowledge of electronics and experience with developing smart hardware.

My speciality is making embedded systems to be web-based and transforming it into global Cloud extensions. Another enjoyment is pushing mobile devices (Android/iOS) to the limits taking non-orthodox approaches to achieve amazing media streaming performance.

2 Key words

2.1 General

State-of-the-Art, Innovation, Performance, Perseverance, Automotive, R&D

2.2 Programming

HTML5, CSS3, Javascript, Ajax, JSON, PHP, WebRTC, C++ 11/STL, ASP.NET, SQL, C#/WPF, Silverlight, Android/Native (Java/JNI), iOS (Swift/Objective-C), Media streaming, GStreamer, Stagefright, OpenMAX, OpenWRT, OOP, UML

2.3 Protocols

HTTP, TCP/IP, CAN, UDS, KWP2000, ASAM, SOME/IP

2.4 Operating Systems

Linux, Android, iOS, Windows, OpenWRT, FreeRTOS

2.5 Hardware

Analog, Digital, Wireless, ARM, MIPS, Complete Design

3 Work Experience (summary)

3.1 Currently

From December 2010: working at Logena Automotive B.V. as Desktop, Embedded and Web Application developer. It involves also hardware development. The programming languages, protocols and technologies: C/C++, C++ 11/STL, C#/WPF, HTML5/CSS3, Javascript, PHP, MySQL, Android/Native (Java/JNI), iOS (Swift/Objective-C), Media streaming, GStreamer, Stagefright, OpenMAX, OpenWRT, UDS, CAN, KWP2000 etc.

3.2 In the past

December 2008 - November 2010: Desktop and Web Application developer at MASC B.V in Nijmegen. Used programming languages: C# / ASP.NET / T-SQL / Silverlight.

December 2001 - November 2008: Working as software developer at Systec Designs in Amsterdam. Tasks: developing native Windows applications for controlling and monitoring the hardware developed by this company (e.g. monitoring and controlling card readers, radiographic systems, light engineering etc.).

1999 - 2001: Running my own Electronics Repair company (Netko Electronica Reparaties) in Meppel.

4 Skills (summary)

4.1 Software Development:

- Windows native applications in C++
- Linux applications in C/C++ 11/STL
- Android/Native (Java/JNI) applications
- iOS (Swift/Objective-C) applications
- Media streaming (GStreamer, Stagefright, OpenMAX, Hardware acceleration, etc.)
- High Performance C#/WPF/.NET applications
- Silverlight web applications
- Smart cross-browser web applications using HTML5/CSS3/Javascript
- Server-side programming: PHP, MySQL, ASP.NET, T-SQL
- Innovative web technologies: WebRTC
- High Performance Embedded HTTP servers
- Automotive embedded software development (C/C++ 11/STL)
- Automotive protocols and standards: CAN, UDS, KWP2000, ASAM, DTCs etc.
- Complete architecture of automotive embedded cloud systems for global data exchange and remote diagnostics
- Operating systems: Windows, Linux, Android, OpenWRT, FreeRTOS, Bare Metal systems

4.2 Hardware development:

- Full development of High Performance, 3G/Wi-Fi/Ethernet enabled (automotive) embedded devices
- Excellent knowledge of electronics

4.3 General:

- Object-oriented programming
- UML
- Scrum

5 Education

A foreign Bachelor's degree (Electrical and Electronics Engineering) at Electro Technical College Banja Luka (ex-Yugoslavia; 1985-1989). I am a true autodidact loving proven science and technology.

6 Personal information

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7 Work Experience (detailed)

7.1 Personal projects

At the moment I'm mainly occupied with the development of an audio/video conferencing system that is fully web-based. Multiple streaming/communication protocols are being used like WebRTC, WebSockets, HLS and RTP. For the server-side programming I use PHP (OOP) + MySql. Client-side is coded with HTML5, CSS3 and Javascript/JSON.

Another part of this project is developing a special kind of hybrid multimedia software running on low-cost Android mini PCs. It's a combination of Android Stagefright/OpenMAX framework components and custom Linux GStreamer components providing Audio/Video acquisition and streaming with hardware acceleration. Used frameworks and languages: Android native framework, GStreamer, C++ 11/STL, Java (Android) etc.

By now, only one part of this conferencing system is live: Kingdom Hall conferencing – used by some Jehovah's Witnesses to remotely follow their meetings when it's not possible to attend them personally.

The link is: <http://www.polymeet.net>

7.2 At current company (from 2010)

7.2.1 Summary

Developing Automotive Desktop Tools, Embedded programming (Tools and ECUs), Media streaming and Web Applications. Also charged with the architecture and development of a global, Cloud enabled embedded system involving sophisticated hardware development too.

7.2.2 Some of the projects

- Octolink – a global vehicle communication system involving several different development areas: embedded, cloud (client-side and server-side) and smart hardware (for some general info please see <http://www.octolink.net>).
 - *Product type*: Cloud system
 - *Tasks*: system + software architecture, main software development, hardware architecture + design
 - *Languages and techniques*: C++ 11/STL, HTML5/CSS3/Javascript, PHP/MySql, embedded Linux, OpenWRT, TCP/IP, HTTP, SPI, UDS, CAN, KWP2000, ASAM etc.
- Automotive Media streaming – low-latency streaming from blind-spot cameras onto Android/iOS mobile devices
 - *Product type*: Android (Java/Native), iOS
 - *Tasks*: whole development of Android and iOS applications capable of low-latency RTP over UDP media streaming, hardware research and selection
 - *Languages and techniques*: Java, Android Native (JNI), Android native framework, iOS (Swift/Objective-C), Apple AVFoundation, C++ 11/STL, RTP, UDP, MJPEG, GStreamer framework etc.
- Smart Translator – A customizable tool for smart file conversion containing structured data (like XML, JSON, MATLAB, various proprietary project file formats etc).
 - *Product type*: Windows Desktop application
 - *Tasks*: Software architecture and development
 - *Languages and techniques*: .NET/C#/WPF
- Automotive Diagnostic Tool – A Windows application written in .NET/C#/WPF used for automotive diagnostics, secured with hard-lock keys
 - *Product type*: Windows Desktop application
 - *Tasks*: Development/maintenance
 - *Languages and techniques*: .NET/C#/WPF
- Various Desktop and Cloud applications using .NET/C#/WPF, HTML5/CSS3/Javascript, PHP/MySql

7.3 At MASC B.V. (2008-2010)

7.3.1 Summary

Mainly engaged in developing various types of Desktop / Web applications.

7.3.2 Some of the projects

- Visualizing and mapping of thoughts and concepts
 - *Product type:* Desktop / Web applications
 - *Tasks:* development
 - *Languages and techniques:* C#, ASP.NET, Javascript, WCF, T-SQL 2005, IIS-6, .NET 3.5, VS-2008

- Conducting extensive automated text analysis and administration of results
 - *Product type:* Web Application / Desktop Application / Windows Service application
 - *Tasks:* partial software architecture and development
 - *Languages and techniques:* C#, C++, ASP.NET, Javascript, T-SQL 2005/2008, Windows Services, COM, .NET 3.5, VS-2008

- Silverlight camping data management application involving offline/online synchronisation
 - *Product type:* Web-/Out-of-browser Silverlight application
 - *Tasks:* partial software architecture and development
 - *Languages and techniques:* C#, XAML, ASP.NET, Silverlight 3, WCF, .NET 3.5, VS-2008/2010

- High performance media player integrating a DirectShow / Media Foundation module inside a WPF application
 - *Product type:* WPF / Silverlight application
 - *Tasks:* Software architecture and development
 - *Languages and techniques:* C#, XAML, C++, COM, Silverlight 4, WPF, DirectShow, Microsoft Media Foundation, .NET 4, VS-2010

7.4 At Systec Designs (2001-2008)

7.4.1 Summary

Developing Windows native software to support and/or control the specific hardware designed by this company.

7.4.2 Some of the projects:

- Control of 'intelligent' lighting tiles; visual editing and composition of complex lighting effects; wireless server / client system with different backup systems to ensure continuity, synchronisation with the audio streams (e.g. lighting effects to the beat of music), triggering light effects by external sensors
 - *Product type:* Windows native application
 - *Tasks:* Software architecture and development
 - *Languages and techniques:* C++, COM, Windows Driver Model, MAPI, GSM modem control (SMS), FTP, DSP, FFT calculations

- Card authentication system: school locker system with a management module
 - *Product type:* Windows native application
 - *Tasks:* Software architecture and development
 - *Languages and techniques:* C++, Windows Driver Model

- Control of LED signalling boards, Fingerprint authentication systems, measurement equipment etc.
 - *Product type:* Windows native applications
 - *Tasks:* Software architecture and development
 - *Languages and techniques:* C++, Windows Driver Model

7.5 More information

Please contact me for more details about my work experience.