

# 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

C++ 11/STL, HTML5, CSS3, Javascript, Ajax, Node.js, PHP, WebRTC, SQL, C#/WPF, Android/Native (Java/C++), iOS (Swift/Objective-C/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, OpenWRT, FreeRTOS, Windows

### 2.5 Hardware

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

## 3 Work Experience (summary)

### 3.1 Currently

From December 2010: working at Sioux/Logena 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/C++), iOS (Swift/Obj-C/C++), Media streaming, GStreamer, Stagefright, OpenMAX, OpenWRT, UDS, CAN, KWP2000, V2X, SOME/IP 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:

- Linux applications (C/C++ 11/STL)
- Linux drivers (net/usb devices)
- Android/Native (Java/C++) applications
- iOS (Swift/Objective-C/C++) applications
- Windows applications (C#/WPF/C++)
- Media streaming (GStreamer, Stagefright, OpenMAX, Hardware acceleration, etc.)
- Smart cross-browser web applications using HTML5/CSS3/Javascript
- Server-side programming: Node.js, PHP, MySql
- Innovative web technologies: WebRTC, Google Maps API
- High Performance Embedded HTTP servers
- Automotive embedded software development (C/C++ 11/STL)
- Automotive protocols and standards: CAN, UDS, KWP2000, ASAM, DTCs, SOME/IP, V2X etc.
- Complete architecture of automotive embedded cloud systems for global data exchange and remote diagnostics
- Operating systems: Linux, Android, iOS, OpenWRT, FreeRTOS, Windows, Bare Metal systems

### 4.2 Hardware development:

- Full development of High Performance, 4G/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

**Name:** N. Cvijetić

**Nickname:** Nedjo

**Date of birth:** July, 4<sup>th</sup> 1971

**Nationality:** Dutch (naturalized)

**Address:** Kruisdistel 37, NL-5432 BJ Cuijk

**Phone numbers:**

+31-485-750728 (after 18:00 h)

+31-6-55590902 (mobile)

**Email:** [job@nedjosoft.com](mailto:job@nedjosoft.com)

**Website:** [www.nedjosoft.com](http://www.nedjosoft.com)

**Languages:** Dutch, English, Serbian/Croatian

## 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 Node.js + 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: <https://www.polymeet.org>

I have also developed a high-performance Google Maps web application for drawing large amount of map markers and area polygons with hundreds of points (<https://www.polymeet.org/territory>).

### 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

- Automotive Media streaming – low-latency streaming from blind-spot cameras onto Android/iOS mobile devices
  - *Product type:* Android (Java/Native), iOS, OpenWRT (Linux)
  - *Tasks:* whole development of Android and iOS applications capable of low-latency RTP over UDP media streaming, custom wireless communication through routers running embedded Linux, hardware research and selection, custom Linux drivers for high data throughput streams
  - *Languages and techniques:* Java, Android Native (JNI/C++), Android native framework, iOS (Swift/Objective-C/C++), Apple AVFoundation, C++ 11/STL, RTP, UDP, H.264/MJPEG, SOME/IP etc.
- Octolink – a global vehicle communication system involving several different development areas: embedded, cloud (client-side and server-side) and smart hardware.
  - *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.
- Smart Translator – An adaptable 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 synchronization
  - *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 System 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, synchronization 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.