

Resume of Mats Byggmästar



General

Born: 1972 in Jakobstad, Finland
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Language skills

Swedish (native language), English (very good, spoken and written), Norwegian (good), Finnish (basic skills).

Work experience

Object oriented, multithreaded/multi-process, soft real-time system design and implementation in MS Windows and UNIX (Linux, POSIX) environments. Design, implementation and unit-test of protocol layers, algorithms and applications in advanced protocol analysis and simulation tools for digital cellular networks (GSM, 3G, D-AMPS). Studying and utilization of telecom specifications (3GPP, ITU-T, ANSI, RFC, etc.). Software documentation (technical and end-user).

Below is a list of the more significant software projects I have worked with:

- Encryption algorithms and their supporting protocols in mobile networks;
 - GEA1/GEA2 deciphering on Gb-interface in GPRS.
 - f8 deciphering on Iub-interface in 3G (and on Iub'-interface in Nokia I-HSPA).
 - IPsec ESP deciphering in IP and 3G transport networks.
 - IS-130 ciphering and deciphering in D-AMPS.
- Speech extraction from the relevant user-plane protocols on Abis, Ater, A, Iub, Iu-CS and Nb interfaces in GSM/3G; and decoding/playback/recording of the speech. Speech codecs used; A-law, u-law, GSM HR, GSM FR, GSM EFR, AMR-NB, AMR-WB.
- Identification and mapping of user-plane data based on the signalling protocols on A, Iu-CS, Iu-PS and Nb interfaces in GSM/3G.
- Optimized low level synchronisation and decoding of the TFO (Tandem Free Operation) protocol and implementation of TFO state machine in GSM/3G.
- Synchronisation, segmentation and decoding of several proprietary PCU protocols on Abis-interface in GPRS.
- Optimized low level pattern recognition and filtering of protocol frames.
- Decoding and encoding of ISLP, IS-130 and IS-135 protocols in the D-AMPS network.
- Linux-based protocol analyser and simulator framework.
- Remote controlled Ethernet/IP firewall for internet access restriction (Linux-based firewall/server application and Windows client application).
- PC based communication tool for disabled person (PC software and custom made USB keypad).
- GUI design using the Qt widget library.
- Linux device driver for proprietary interface card.
- Compiler design and implementation for a proprietary scripting language with "C" syntax.

Planned and held courses in protocol theory and end-user product training.

Part-time and full-time lecturer in vocational school.

Programming languages and software development tools

Advanced skills in C++, C and x86-assembly. Average skills in Java, C# and VB.NET.

Development tools used; Microsoft Visual Studio (VC6, VC7, VC8), GCC compiler tool-chain, DevPartner, BullseyeCoverage, PC-lint, PVCS & CVS.

Characteristics as software developer

Marko Väisänen, NetHawk Oyj: "Mats Byggmästar has proven to be efficient and reliable partner with excellent programming skills. The quality of his SW components has always been of high class and his effort estimations have been accurate"

Ole G. Hagen, Moesarc Technology AS: "Mats is methodical and analytical in his work, with a strong focus on quality. As a team member he contributes actively to improve cooperation."

Hobby

In recent years I have spent much free time on hardware design; digital electronics, radio links, temperature regulators, power switching modules, embedded systems with microcontrollers, etc. I have so far worked with Renesas 16-bit and Microchip 8-bit MCU's. CNC machines; building and using is also a great interest of mine.

Between 1993 and 2003 I was in periods very active as real-time 3D graphics programmer. I made several 3D engines for multimedia demos used by the demo-group Doomsday. The engines were made in C, C++ and Assembly under MS-DOS and MS-Windows. Both highly optimized software rendering, and OpenGL & OpenGL ES hardware accelerated. 11 multimedia demos were released of which 4 won 1:st place in the demo-competitions: Assembly'97, Abduction'98, Dreamhack'98 and Assembly'03 respectively.

Employment history

Subcontractor (Mats Byggmästar Consulting Ab) for NetHawk Oyj, Finland. June 2001 to June 2008. Software development for NetHawk GSM, 3G and M5 protocol analyser platforms.

Yrkesskolan Optima, Jakobstad, Finland. August 2002 to July 2007. Part-time (~30%) lecturer in vocational school. Courses: programming, data communications, telephone systems, UNIX/Linux.

Subcontractor (Mats Byggmästar Consulting Ab) for Moesarc Technology AS, Norway. November 2000 to April 2001. Software development for their protocol testing equipment.

Moesarc Technology AS, Oslo, Norway. August 1997 to October 2000. Software design and implementation of software-protocol testing equipment for digital cellular networks. Prepared and held courses in protocol theory and end-user product training.

Yrkesskolan i Jakobstad, Finland. August 1996 to July 1997. Full-time lecturer in vocational school. Courses: mathematics, information technology, microcomputers, analogue electronics, power electronics, technical drawing, etc.

Education

B.Sc. degree in Computer Engineering within the study programme of Electrical Engineering at Tekniska läroverket (Swedish Institute of Technology, Arcada), Espoo, Finland, 1992-1996. Courses and grades are available online at: www.multi.fi/~mbc/personal_grades.html.

Vocational school degree in Computers and electronics at Yrkesskolan i Jakobstad, Finland, 1989-1991.

Military service

GrkK, Nylands Brigad, Finland, 1991-1992. Special training in telecommunications.