

# Darko Tominac

Lead Software Engineer · Embedded Systems · Owner, Embedded Solutions

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## PROFESSIONAL SUMMARY

Lead Software Engineer specializing in embedded systems, Linux/Unix environments, and TCP/IP networking. Extensive expertise in automotive embedded software and Linux kernel development, including AUTOSAR-compliant drivers, automotive security protocols (MACsec), complex Ethernet transceiver drivers, and cross-architecture kernel/BPF porting. Currently at GlobalLogic Croatia (a Hitachi Group company), leading development of AUTOSAR modules for Ethernet transceivers and automotive security. Proven leadership in complex driver development, with a strong background in real-time operating systems and communication protocols.

## EXPERIENCE

### Lead Software Engineer, Team Lead

GlobalLogic Croatia · Full-time | Jul 2018 – Present | Zagreb, Croatia

Team Lead on an automotive (AUTOSAR) development-tools project and on AUTOSAR complex driver development. Led AUTOSAR MACsec security and Ethernet transceiver driver work (client: Elektrobit), and a cross-architecture BPF kernel port (x86\_64 to arm64) for a confidential client.

### DevOps Team Lead

MIPS Ltd. · Full-time | Apr 1996 – Jul 2018

Led delivery of enterprise and embedded systems for major clients, notably Croatian Post (Hrvatska pošta): Enterprise Service Bus (ServiceMix/ActiveMQ) across hundreds of distributed post offices, high-availability and disaster recovery (Heartbeat/DRBD), migration of 800+ servers from SCO OpenServer to Linux, Linux kernel driver porting, and reverse engineering of a Windows USB serial driver.

### Software Developer — Embedded Systems

EXOR · Full-time | Jun 1992 – Apr 1996

Embedded systems software development.

## KEY EXPERTISE

**Embedded Systems:** ARM, ESP32, STM32, Intel 8051, Infineon AURIX

**Languages:** C/C++, Java, ESQ/L/C

**Linux / Unix:** Kernel Programming, BPF, Yocto/OpenEmbedded, SysAdmin, Debugging, Shell Scripting

**Networking:** TCP/IP, Ethernet, RS232, RS485, I2C, SPI, CAN

**Security:** MACsec, Windows/Linux Security, Cryptography, GCM-AES

**RTOS:** FreeRTOS, VxWorks, Embedded Linux, AUTOSAR

## NOTABLE PROJECTS

### BPF Cross-Architecture Port (x86\_64 to arm64) — GlobalLogic Croatia · End client under NDA

Ported BPF patches from x86\_64 to arm64 while backporting from recent mainline to the target's older kernel; reconciled a kernel/module type mismatch. Brought the BPF kernel self-tests to arm64 — built with Yocto/OpenEmbedded, booted under QEMU, and validated over the serial console.

*Tech: BPF, Linux Kernel, arm64/AArch64, Kernel Self-Tests, Yocto, QEMU, C*

### MACsec Automotive Security Protocol — GlobalLogic Croatia / Elektrobit

Implemented MACsec (IEEE 802.1AE) within the AUTOSAR stack — one of the first such implementations in the automotive industry worldwide. Layer 2 encryption, integrity and authentication of in-vehicle Ethernet; GCM-AES-128/256 and XPN cipher suites.

*Tech: MACsec, AUTOSAR, IEEE 802.1AE, GCM-AES, MISRA C, C*

### **Automotive CAN & Ethernet Transceiver Drivers — Elektrobit GmbH**

AUTOSAR-compliant drivers for NXP CAN and Marvell/Realtek Ethernet transceivers on the Infineon TC397XE AURIX 2G platform; MISRA C compliant.

*Tech: CAN, Ethernet, AUTOSAR, Infineon AURIX TC3XX, MISRA C*

### **Linux Kernel Driver Development — Croatian Post Inc. (via MIPS Ltd.)**

Ported and maintained Linux kernel drivers for Ethernet Serial Provider (ESP); bug-fixed for newer kernel versions.

*Tech: Linux, Kernel Programming, Device Drivers*

### **Reverse Engineering — USB Serial Emulation Driver — Croatian Post Inc. (via MIPS Ltd.)**

Identified and fixed critical bugs in a Metrologic USB serial emulation driver, resolving Windows system freezes at client sites.

*Tech: Reverse Engineering, IDA Pro, Windows Kernel, C++*

### **Enterprise Service Bus & Messaging — Croatian Post Inc. (via MIPS Ltd.)**

Designed and deployed an ESB with ServiceMix as the core engine and ActiveMQ as the transport layer, moving data and messages from hundreds of post offices to a central location across a nationwide network.

*Tech: ServiceMix, ActiveMQ, Java EE, Linux, Informix*

### **Earlier Projects (selected) — Croatian Post, HPT, industry**

C/UNIX/Informix systems: TCP/IP telegram delivery, distributed client-server data acquisition (800+ sites) with encryption/compression, billing-data collection, e-mail distribution, banking printer protocols, 4GL reporting, fault-tolerant mechanisms, and 8051 industrial serial protocols.

*Tech: C, ANSI C, UNIX, Linux, Informix, ESQL/C, 4GL, TCP/IP, 8051*

## **EDUCATION**

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**Mag. Ing. Electrical Engineering** (Major: Computer Science) — University of Zagreb

**DSM — Diploma in Study Management** — University of Zagreb

## **TOOLS & TECHNOLOGIES**

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**Development:** GCC, Yocto/BitBake, Valgrind, Eclipse CDT, Visual C++, ESP32 IDF, Git, GitLab, Docker, Jira, Jenkins

**Debugging:** Lauterbach TRACE32, Segger J-Link, Wireshark, IDA Pro

**Virtualization:** VMware, QEMU, Docker