

# Christophe CONIL

christophe.conil@gmail.com - agicco.fr - linkedin.com/in/christophe-conil

## **Inventor - Embedded, Real-time & AI-Accelerated Software Engineer.**

**Inventor of hardware and software products, from concept and CAD to firmware and apps. Software development, expertise in real-time, software security, optimization of embedded environments. AI-accelerated development and multi-LLM systems. Team, customer, project and portfolio management.**

## **Skills**

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- ◆ Product invention end to end: concept, CAD / mechanical design, electronics, ESP32 firmware, backend and mobile app.
- ◆ Expertise in AI-accelerated development: agentic coding workflows (Claude Code), multi-LLM orchestration, AI tooling for embedded and product development.
- ◆ 2026: Prize winner (\$50k) of PMG's AI & Tech Sandbox Global Hackathon (Distinction for Innovation, 120+ teams from 30+ countries) with GEO - The Garden of Emergent Organisms, a multi-LLM system generating brand video assets end to end.
- ◆ 2025: Speaker at Embedded Recipes - "AI-Accelerated Development: Practical Applications for Embedded Systems Engineers".
- ◆ Expertise in optimisation of embedded systems (execution time, footprint)
- ◆ Expertise in C development of drivers, bootloader and low-level critical software.
- ◆ Expertise in virtualisation and paravirtualisation systems.
- ◆ Expertise in software architecture in the automotive industry (AUTOSAR, ISO26262, ASIL AD).
- ◆ Expertise in client-server software development with encryption layer (C ++ QT / QML + SSL/TLS + Key Management) and OS-based certificates
- ◆ High flexibility of application areas and rapid integration into projects, reverse engineering, exploit/penetration tests (C/SQL/Architecture).
- ◆ Porting of operating systems (BSP / PSP + ASP / CSP): Linux and Microkernels.
- ◆ Project management, team management, supplier, customer relationship.
- ◆ Autonomous approach, excellent communication Skills, strong resistance to stress and critical situations management.
- ◆ Design in the context of structured development process.

## **Technical environment**

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- ◆ Languages: C, C ++ (QT), QML, Golang, ASM, Other: PHP, JVS, VB, SQL, Bash, Perl, Java / Java RT, VHDL, Python, Shell, Flutter/Dart, UML / OMT, CANoe script...
- ◆ AI: Claude Code, LLM APIs (Claude, GPT, Gemini), MCP, agentic and multi-LLM pipelines, image/video/3D generation APIs.
- ◆ Excellent knowledge of Kernel and User Development on multiple usual operating systems (Linux, Windows) and exotic systems (Yocto / Linux RTAI / Fusion / Xenomai, ELinOS embedded Linux, AUTOSAR OS, Microkernel PikeOS, FreeRTOS, T-Kernel)
- ◆ Software optimisation in terms of CPU usage, memory, scheduling policy, start time
- ◆ Emulation and CI auto tests using QEMU environment.

- ◆ Development of drivers (Ethernet, serial, Bluetooth, Audio, CAN, I2C, MOST, LIDAR, FlexRay, FPGA, PCI / PCIe Bus, Interrupt controller, MMU, Timer, Video ....) on multiple OS.
- ◆ Development ASM ARM / PPC / x86 / Tricore / MIPS / SH4: Caches, MMUs, DMA, TLBs
- ◆ Development of numerous software and various plugins (software development on Windows, Linux, MacOS, Android & iOS. Web WordPress, Drupal). MVC client / server development with encryption. Linux server administration.
- ◆ Use multiple debugging tools, development environments and testing (Lauterbach, Eclipse, MISRA, CMake, GCC, CANoe / CANalyzer, Wireshark ...).

## Languages

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- ◆ French      Mother tongue
- ◆ German     Fluent (Business)
- ◆ English    Fluent (Business)

## Various

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- ◆ Training      2007: UTBM (Technology University of Belfort Montbéliard).  
Computer Engineering Degree, Embedded Systems option.  
2013: Complete training PMP.
- ◆ Interests     Globetrotter. Paragliding, canyoning, caving,  
Auto mechanics, collection vehicle restoration. Design.

| Business                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| <b>BayLibre</b><br><br><i>since 2020</i>                         | Architect, Developer, AI Referent<br>Company AI referent. Clients: Rode, Verkada, SRI, Meta. Multiple developments with main focus on Yocto and QEMU. Creation of an automatic remote debugging system using QEMU. Golang development for video streaming. Embedded graphical development (LVGL-like UI framework).                                                                                                                             |
| <b>Save My Planet</b><br><br><i>since 2023</i>                   | Founding Director<br>Invention and creation of 11 energy and water saving products for households (EcoThermostat: smart retrofit of electric water heaters, 15-20% savings; La Maison qui Respire; Fleur de Soleil...). Hands-on on most of the chain: product concept, CAD / mechanical design, electronics, ESP32 firmware + sensors + MQTT, backend (Firebase), app development (Flutter/Dart). AI-accelerated development with Claude Code. |
| <b>YNNOV</b><br><br><i>2020-2025</i>                             | Lead Developer, Architect<br>Lead developer of SpineBack (spineback.fr): C++/OpenGL development for a Bluetooth based medical tracking equipment.                                                                                                                                                                                                                                                                                               |
| <b>Favotec</b><br><i>Startup Germany</i><br><br><i>2014-2020</i> | Architect, Developer, Founding Director<br>Architecture, specification, lead developer (> 90%) of a multi-platform enterprise management software (> 300,000 lines of C++ / QML / JS / PHP spread over 2000 components). Team building, training, Supplier management.                                                                                                                                                                          |
| <b>Altran East</b><br><i>Germany</i><br><br><i>2010-2014</i>     | Delivery Manager<br>Team management and training (30-50 engineers), portfolio management, customer relationship. Part of a developer team dedicated to "rescue" projects in difficulty.                                                                                                                                                                                                                                                         |
| <b>BOSCH: CC / ECS3</b><br>(Altran EST)<br><br><i>2013</i>       | Developer<br>Development of a microprocessor self-test program in ASM (2000 lines). Quality/ Exploit research (Proof of program, formal verification of a C microkernel containing > 20k warnings, according fixes). AUTOSAR driver development in C. Code generation for a steering wheel angle sensor.                                                                                                                                        |
| <b>BOSCH: CC / EBP5</b><br>(Altran EST)<br><br><i>2010</i>       | Optimization, Architect<br>Optimizations and development (C/C++/ASM) on an existing centralised ECU (BMW DCU) reaching hardware limitations. Tracing, Optimisations project wide. AUTOSAR software architecture. "Debug" team.                                                                                                                                                                                                                  |
| <b>BOSCH: CM / AI</b><br>(Altran EST)<br><br><i>2008-2009</i>    | Bootloader developer<br>Full development of a bootloader (C, C++, Linker) for Volvo/Jaguar, acting as a CAN/MOST gateway to reprogram cars on 20 different MIPS Boards. Modification of the OS time quantum, integration/Redevelopment of multiple drivers. Subcontractor management. High reactivity of the software (<1ms latency). Very high compacity.                                                                                      |
|                                                                  | OS developer                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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| <b>SYSGO France</b><br><i>Paris</i><br><br>2007 | JTAG-free development and porting of OSses (C/ASM), Drivers development. BSP for Embedded Linux ElinOS on multiple boards (PPC/X86 /MIPS/ARM.), ASP/CSP+BSP on PikeOS microkernel (SH4), Drivers. (Interrupt—free Ethernet, IDE, Serial, FPGA, Bus, Interrupt controller, MMU...) and consulting (Thales, Airbus, EADS, Freescale ...) |
| <b>Addi-Data</b><br><br>2006: 6 months.         | Training low-level Developer<br>Development of drivers and a low-level automation tool on a Linux target. (“First” fully automated remote user AND kernel debugging).<br>Porting of a user software with real-time constraints. (Porting of Xenomai, usage of low-latency kernel, modified time quantum)                               |