Oscar Deschamps — Embedded Systems Security Engineer

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EXPERIENCE

- **CentumTnS** — Lyon
  Apprentice Embedded Systems Engineer — December 2024 - September 2026
  - **BSP**: Creation of a security-focused BSP
  - **Security**: SecureBoot concepts, Atomic updates, A/B redundancy
  - **Development**: Development of OPTEE Trusted Applications, Linux/U-boot Drivers
  - **Hardware**: Testing and fixing technical issues on embedded components
  - **Yocto**: Yocto environment with the creation of a meta-layer for the BSP
  - **Electronics**: Understanding of electronic schematics and embedded components
  - **Linux**: Patched a Linux kernel crash involving the dm-waitfor function

- **LeNewt** — Lyon
  Apprentice Embedded Systems Engineer — September 2023 - September 2025
  - **HMI**: Development of an HMI in C++ with Qt, Bug fixing
  - **OTA Updates**: Implementation of OTA updates with SWupdate or RAUC
  - **Project Management**: Creation of a Qt HMI with an API bridging the user and the connection of an embedded system to a network (DBUS, NetworkManager)
  - **Yocto**: Improvement of the Yocto environment, implementation of security measures at the boot stage

PERSONAL PROJECTS

- **Rootkit**: Linux rootkit that hooks system calls to hide data, create backdoors, and open secret connections
- **HID Attack**: Attack where a Raspberry Pico (Bad USB) creates a connection with a Raspberry Pi, subsequently exploiting CVE-2025-6019 to gain root control of the machine
- **ELF binary infector**: Infects a payload into a code cave of a binary
- **Process injector**: Injects a payload into a process at run-time

SKILLS

- **Linux**: Drivers, Kernel patching, DBus API, development and debug of peripherals (USB, I2S, SPI...)
- **C**: Reconstruction of Objdump, nm, Linux terminal, Linux and U-Boot Drivers, creation of a rootkit hooking syscalls
- **C++**: Qt, QThread management, supervision HMI for embedded machines
- **Embedded Cybersecurity**: SecureBoot, OPTEE, Rauc, hardening
- **System**: Proxmox, Docker, Linux
- **Languages and Scripting**: Python, Bash, Powershell, C, C++, Assembly
- **PWN**: Reverse Engineering, Buffer overflow, Shellcode

EDUCATION

- **ESGI** — Lyon
  Master in Cybersecurity — September 2024 - September 2026

- **Epitech** — Lyon
  Bachelor of Computer Science — September 2021 - September 2024

- **Lycée de la Cotière** — Lyon
  High School Diploma (Baccalauréat), specialization in CS, Math, and Engineering Science — September 2020 - June 2022

MISCELLANEOUS

- **Certification**: Cisco CCNA
- **Sport**: Basketball, Gym
- **Learning**: Reverse Engineering (x86, ARM), Rust, Malware development
- **Other**: Video games, Competitions