Matthieu MICHEL

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SUMMARY

CESI engineering student specializing in Computer Science with hands-on expertise in electronics and embedded systems. Skills in PCB design (KiCad), C/C++ firmware development, and complete product realization from circuit design to mechanical enclosures.

HARDWARE & EMBEDDED PROJECTS

ESP32 Pico V3 Development Board — Custom PCB with RF design, USB programming, and reflow assembly | KiCad, ESP32

SMD Challenge: Keyring Edition — STM32F030 keychain with hand-soldered 01005 (0.4×0.2mm) components, USB-C, transparent case | STM32, Hardware PWM

µLife Keychain — Conway's Game of Life on 400-LED matrix using charlieplexing | STM32G431, real-time animation

PROGRAMMING PROJECTS

Unikeys — Desktop encryption application with self-decrypting executables and tamper protection | C#, WPF, .NET 7

QuickCompress — Multi-format media compression tool with batch processing | C#, WPF, .NET 6

PROFESSIONAL EXPERIENCE

IT Intern, Luxembourg Hospital Center (CHL) — Apr 2025 — Jul 2025

Network infrastructure documentation and security analysis. Mapped 7 critical applications with 112 objects across 30 servers according to ANSSI standards using Mercator. Restructured data collection processes with focus on AI systems integration.

EDUCATION

CESI Engineering School, Engineering Cycle - 1st Year — Sep 2025 — Present

Vandœuvre-lès-Nancy, France — Computer Science specialization. Data Science, AI, operations research, system administration.

CESI Engineering School, Integrated Preparatory Cycle — Sep 2023 — Jun 2025

Vandœuvre-lès-Nancy, France — Class representative. Computer Science minor. **Embedded systems, electronics**, OOP, web development, networks, mechanics.

Baccalauréat, Summa Cum Laude — Sep 2020 — Jun 2023

Institut Notre-Dame de la Providence, Thionville, France — Specializations: Mathematics and Computer Science (NSI).

SKILLS

Embedded Systems & Electronics — C/C++, STM32 HAL, ESP32 • KiCad (schematic capture, PCB layout, 2-4 layer routing) • Circuit design, power supply design, RF circuit design • Hardware debugging • Components selection

Hardware Assembly & Manufacturing — Reflow soldering, hand soldering • JLCPCB assembly and design optimization • SMD rework and quality control

Firmware & Programming — Real-time systems, timer interrupts, PWM control • Charlieplexing, LED matrix control • Git/GitHub • C# (.NET, WinForms, WPF, ASP.NET)

Mechanical Design & Prototyping — Fusion 360 CAD • SLA 3D printing (JLC3DP) • Enclosure design with tolerances • Mechanical constraints and thermal management

IT Infrastructure — Networking: OSI/TCP, routing, VLAN, IPv6 • Security: ANSSI standards • PowerShell, Active Directory • Data Science: ML algorithms, model evaluation

Tools & Collaboration — JetBrains IDEs (CLion, PyCharm, Rider) • OneTrust, Mercator • SQL, data modeling

Soft Skills — Product development lifecycle, methodical debugging, self-directed learning, technical documentation, project management

LANGUAGES

Languages — English: C1 (TOEIC: 985/990) • French: Native