



GOLGOTIU ANDREEA-FLORINA

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📍 Cluj-Napoca, Romania

ABOUT ME

I am a highly **motivated** and **adaptable** person, **always eager to learn and improve**, ready to embrace new challenges in a collaborative environment. Having practiced dance from a young age, I gained substantial experience in **teamwork** and developed valuable qualities such as **discipline, focus, coordination** and **resilience** — all of which I bring into my academic and professional work. My involvement in volunteer projects during high school, including as a member of the student council, where I proposed initiatives and improvements to support students, as well as contributing to the organization of school events, strengthened my **communication skills, sense of responsibility**, and **ability to collaborate effectively towards a common goal**.

SKILLS

| | |
|--------------------------|------------------------|
| C Programming Language | Vivado |
| C++ Programming Language | MPLAB X IDE |
| Java | Proteus |
| SQL | Blender |
| MATLAB | CSS |
| Cadence OrCAD | HTML |
| LTspice | Microsoft Office Suite |

LANGUAGES

Romanian - native
English - proficient

PROJECTS

Circuit for controlling the concentration of carbon monoxide in an enclosure

This project involved designing a system that monitors and controls the concentration of carbon monoxide (CO) in an enclosed space using a resistive gas sensor. The sensor detects CO levels in the range of 300–10000 ppm, triggering a fan to introduce fresh air when the upper limit is reached and stopping it when the lower limit is met. The sensor's resistance variation (90kΩ to 45kΩ for 100–12000 ppm) was converted into a voltage range of 2V to 16V (given $V_{cc} = 18V$). The electrical diagram includes the current source stage, the output voltage conversion stage, the hysteresis comparator, and the relay, which controls the fan. The fan status (on/off) is signaled by a red LED. I verified the projection and demonstrated correct operation through simulations performed with the OrCAD X Professional Plus package. The Capture CIS modules are used for entering the schematic and PSpice for running the simulations.

[See project](#)

Car tail lights

This project involved developing a controller for a vintage Thunderbird's sequential tail lights, managing three left (LA, LB, LC) and three right (RA, RB, RC) lights using LEFT, RIGHT, and HAZARD inputs. LEFT and RIGHT come from the driver's turn signal switch and cannot be 1 at the same time. According to the specifications, when LEFT = 1 the lights flash in a pattern LA on; LA and LB on; LA, LB, and LC on; all off; and then the sequence repeats. When RIGHT = 1, a similar sequence appears on lights RA, RB, and RC, as indicated on the right side of the picture. If a switch from LEFT to RIGHT (or vice versa) occurs in the middle of a flashing sequence, the circuit should immediately go to the IDLE (lights off) state and then start the new sequence. HAZ comes from the hazard switch, and when HAZ = 1, all six lights flash on and off in unison. HAZ takes precedence if LEFT or RIGHT is also on. The project was implemented in Vivado, ensuring the correct operation of the lighting sequences based on the input signals and required logic.

[See project](#)

Simulation of an RC Low-Pass Filter – Matlab GUI

I developed an interactive graphical interface in Matlab to simulate an RC low-pass filter, allowing users to visualize signal diagrams based on frequency and automatically calculate parameters such as cutoff frequency and angular frequency. The project includes the use of GUI components (uicontrol, uimenu, uibuttongroup) to create an intuitive menu, along with code integration for generating plots and enabling user interaction. It combines basic concepts from electronics and Matlab programming, as well as UX design principles for the menu layout.

[See project](#)

5G NR

This project examines the evolution of mobile communications, focusing on 5G NR (New Radio), the global standard for 5G networks. It covers key transformations in mobile telecommunications from 1G to 5G, highlighting the technical features and advantages of each generation. The study explores the performance improvements in 5G, such as higher data speeds, lower latency, and enhanced connectivity, along with advanced technologies like beamforming, Massive MIMO, and mmWave spectrum. It also details the architecture of 5G networks, including the Radio Access Network (RAN) and Core Network, as well as the operation of specific nodes eNB (evolved Node B) for LTE and gNB (gNodeB) for 5G NR in enabling efficient connectivity in both hybrid and standalone networks. The project demonstrates how 5G is transforming global telecommunications, benefiting consumers, businesses, and industries.

[See project](#)

I also completed a management project, where I contributed to the planning and coordination of a team project, improving my communication and organizational skills.

EDUCATION

Faculty of Electronics, Telecommunications and Information Technology (ETTI)

Technical University of Cluj-Napoca

2022 — present(expected graduation 2026)

"Avram Iancu" National College, Câmpeni, Alba

HOBBIES

Solving **puzzles** has helped me develop strong logical thinking skills, allowing me to identify efficient solutions quickly and accurately. This activity also improved my attention to detail and distributive attention skills.

Traveling – I enjoy exploring new cultures and environments, which has made me more adaptable and broaden my perspective on the world.

Design – I enjoy expressing my creativity through design, selecting elements that resonate with me, and enjoy combining different styles to create unique results.