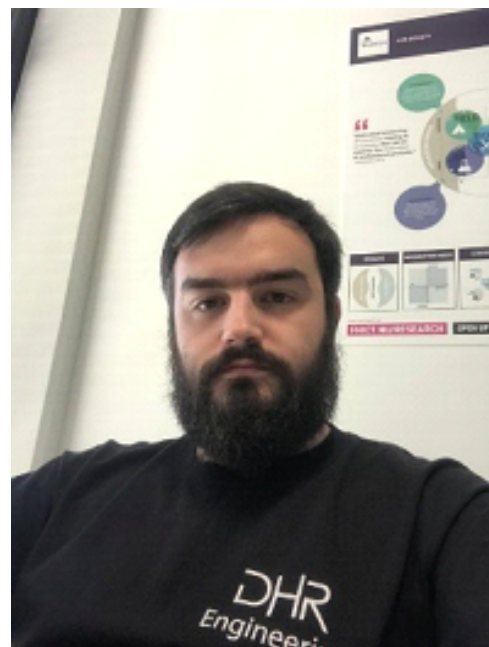




# Why I chose this course?

## 1. Personal Profile

An embedded systems student effective in writing high-quality software for cyber physical systems. Has excellent time-management skills and prioritizes tasks and responsibilities for on-schedule product launches. Manages design efforts and adapts to new challenges to achieve maximum efficiency. Has experience in interacting with hardware on low level and control system development. Remains flexible, gaining knowledge and skills to work effectively both individually and as part of a team.



## 2. Competence Level

## 2.1. Skills:

- Microcontrollers & Microprocessors (ARM Cortex-M, AVR)
- Programmable Logic Controllers (Siemens PLC)
- C, C++, Python
- Linux, RTOS, ROS
- Closed Loop Control Systems
- Communication Protocols (UART, I2C, SPI, CAN, PROFINET)
- Internet of Things knowledge (MQTT, Web Sockets, LoRa)
- Hardware testing equipment (logic analyzer, oscilloscope)
- Unit testing frameworks (Unity and Google test)
- Version control (git)

## 2.2. Study Route

- ICT & Technology *Semester 1-2* (Course based) **#Passed**
- ICT & Technology *Semester 3* (Demand based) **#Failed**
- ICT & Technology *Semester 3* (Demand based) **#Passed**
- Smart Industries Specialization *Semester 4* **#Failed**
- Technology Internship at Hyster-Yale *Semester 5* **#Passed**
- Open Learning *Semester 4* **#Failed**
- Smart Mobile Specialization *Semester 4* **#Passed**
- ICT & Technology *Semester 6* **#Failed**
- Signals & Embedded Systems Minor *Semester 7* **#Ongoing**

## 3. Areas of Interest

### 3.1. Embedded Systems:

- **Why:** Embedded systems are the backbone of many modern devices and systems, from smartphones to IoT devices. I am intrigued by their efficiency and real-time capabilities. I want to learn how to design and program

embedded systems to gain a deeper understanding of low-level hardware interactions.

- ***What I Hope to Learn:*** I hope to learn about microcontroller architectures, real-time operating systems, and how to optimize code for resource-constrained environments. This knowledge is valuable for developing efficient and responsive systems.

## 3.2. Signal Processing:

- ***Why:*** Signal processing plays a crucial role in various fields, including telecommunications, audio processing, medical imaging, and more. I am fascinated by its applications in extracting meaningful information from signals, such as sound, images, and sensor data.
- ***What I Hope to Learn:*** I hope to delve into the theoretical foundations of signal processing, including Fourier analysis, digital filtering, and spectral analysis techniques. Additionally, I aim to gain practical experience in implementing algorithms for noise reduction, signal enhancement, and pattern recognition. Understanding signal processing will enable me to contribute to advancements in fields like telecommunications, medical diagnostics, and audio processing.

## 3.3. Manufacturing/Fabrication:

- ***Why:*** Manufacturing and fabrication technologies are continually evolving. Understanding these processes and how to apply automation and AI can lead to more sustainable and efficient production.
- ***What I Hope to Learn:*** I aim to learn about CNC (Computer Numerical Control) machining, additive manufacturing, and how to implement quality control systems. These skills are valuable in designing and optimizing manufacturing processes.

# 4. Reasons for joining

I'm really into embedded systems and how they work. I've built up a good set of skills with microcontrollers, PLCs, and coding languages, and I've even got some hands-on experience with control systems and hardware. I'm excited about this program because it's a chance to dive deeper into embedded systems, signal processing, and manufacturing/fabrication. I want to learn how

to design and program these systems from the ground up, write code that's super efficient, and even get my hands dirty with some signal processing algorithms. Plus, I found out that it is possible to manufacture and fabricate part for some of your project which sounds really interesting - I was always curious about how things were made. This program is right up my alley, and I know it will give me the knowledge and skills I need to make a real difference in the tech world.

## **5. Goals for this semester**

For this semester I would like to work more with MATLAB in order to learn more about signals and signal processing. In addition I would like to study different ways using signal processing in the real world. In addition I would like try designing so hardware components and possibly fabricating them.