



Ahmed Belkhiri

Embedded Software Engineer

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📅 25/06/2001 🌐 ahmed-belkhiri 🔄 AHMED-BELKHIRI 🔗 Portfolio

👤 PROFILE

An enthusiast person with enormous adaptive abilities, sociable, and a taste for initiative and challenge.

💼 PROFESSIONAL EXPERIENCE

- Embedded Software Engineer** ✉ 03/2024 – present | Ariana, Tunisia
MARE CUSTOS
- Designing and developing drivers for **STM32 micorcontrollers**.
 - Integrating the **micro-ROS** and **FreeRTOS** into the **firmware** on **IAR Workbench** framework.
- Robotic Engineer** 02/2024 – present | Toulouse, France
SHANON TECHNOLOGIES
- Constructing mechanical systems.
 - Creating **schematic blocks** for robotics projects.
 - Developing software applications for designed projects.
- Computer Vision Intern** ✉ 06/2023 – 09/2023 | Ariana, Tunisia
HYDATIS
- Developed a **face detection** system, a critical component for face recognition technology.
 - Engineered an **anti-spoofing** system, incorporating innovative techniques such as **3D depth detection**.
 - Developed a user-friendly **Python interface** to streamline project implementation and usage.
- Research and Development Intern** ✉ 07/2022 – 09/2022 | Ariana, Tunisia
MARE CUSTOS
- Engineered an autonomous robot for pipeline inspection using **SOLIDWORKS**.
 - Controlled the robot with a **PID controller** algorithm.
- Robotic Instructor** 05/2022 – 05/2024 | Manouba, Tunisia
DISCOVERY CLUB JUNIOR – Part Time
- Instructed students in **C/C++** programming and supervised multiple student projects.
 - Supervised participation in national and international junior robotics competitions.

🎓 EDUCATION

- Engineering cycle - INSAT** 09/2020 – 06/2025 | Tunis, Tunisia
National Institute of Applied Science and Technology ✉
Industrial and automatic computing: Study and development of all types of embedded systems, robotics, control systems, industrial mechanics, and electronics
- Baccalaureate degree** 09/2016 – 06/2020 | Gafsa, Tunisia
Pioneer High School Gafsa
National baccalaureate degree in mathematical sciences.

🧠 SKILLS

- Robotics Operating System 'ROS'**
Software development for robot control.
- Micro controllers**
Operational knowledge of Hardware architecture and software tools for Raspberry PI-STM32-ESP32.
- Frameworks**
STM32CUBE, IAR Workbench, Arduino, OpenCV, TensorFlow, QT.
- Programming languages:**
C/C++, Python, Java, SQL, JavaScript, HTML/CSS.
- RTOS**
Adept with FreeRTOS.
- Developer Tools:**
Git, Solidworks, Proteus, Catia, STM32CubeIDE, VS Code, Visual Studio, PyCharm, Eclipse.

PROJECTS

Face Tracker

07/2023 – 08/2023

- Developed a face tracking script using the **MediaPipe** library to detect faces.
 - Programmed **STM32** for motor control and established local communication with **Raspberry Pi 4** via **UART**.
- Keywords:** Python, C, Computer Vision, STM32, Solidworks.

Chess-Playing Robot

01/2023 – 05/2023

- Implemented the **inverse kinematics** algorithm to control the **robotic arm**.
 - Built a computer vision system to detect, identify, and track the chessboard and chess pieces on the board.
- Keywords:** Python, C, Computer Vision, Solidworks, Inverse Kinematics.

Building two autonomous robots

10/2021 – 05/2022

- Constructed two robots meeting specification document requirements, with a focus on **mechanical design**.
 - Engineered a 3-axis robotic arm controlled by an **Arduino microcontroller**.
 - Increased robots precision using velocity and position control based on **PID controller algorithm**.
 - Established local communication for the robots through the **ROS** (Robot Operating System) ecosystem.
- Keywords:** Python, C, C++, STM32, Arduino, Solidworks, Proteus, ROS, PID Controller.

LANGUAGES

English (C1)

French (B2)

Arabic (Native language)

German (A2)

AWARDS

5th Place at Eurobot International Robotics Competition

Planet Sciences

1st Prize at Eurobot National Qualification

Association of Robotics Techniques ATR

1st Place at NRW Makeathon

Orange Tunisia & NRW

Student Entrepreneur Status

Student entrepreneur pole of the university of Carthage

ORGANIZATIONS

Aerobotix INSAT

Member

01/2021 – present | Tunis, Tunisia

Participating with the club in various national and international competitions and guiding members' work and projects.

Association of Robotics Techniques

The official spokesperson

09/2022 – 09/2023

Tunisian Association Mathematical Sciences

Member

08/2015 – 06/2020