



Ahmed Belkhiri

Embedded Software Engineer

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📅 25/06/2001

🌐 ahmed-belkhiri

🔗 AHMED-BELKHIRI

🔗 Portfolio

📁 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

- Created 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

- Built 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

🧠 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

01/2021 – present | Tunis, Tunisia

Member

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

Association of Robotics Techniques

09/2022 – 09/2023

The official spokesperson

Tunisian Association Mathematical Sciences

08/2015 – 06/2020

Member