Mehdi Nouni

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Experience

- **Technozor** **Centre Urbain Nord, Tunis, Tunisia**
  Robotics Software Intern *July, 2024 – September, 2024*
  - **Miniature Submarine Development**:
    * Developed the entire code for all sensors and actuators, including gyroscopes, accelerometers, and water level sensors, etc... for a miniature submarine.
    * Implemented MQTT protocol to manage and transmit real-time sensor data over Wi-Fi with an ESP-32 to visualize it through a Grafana dashboard.

- **AS2E Automation** **Soukra, Ariana, Tunisia**
  Industrial Automation Intern *June, 2023 – July, 2023*
  - **Industrial Robotics Simulation**:
    * Utilized simulation environments to work with industrial robotic arms such as FANUC and Denso to conduct simulations for basic industrial tasks such as pick-and-place operations in simulation softwares including FANUC Roboguide and Denso Wincaps III.

Personal Projects

- **Chess Playing Robot Arm:**
  End of the Year School Project *May, 2024 – June, 2024*
  - Developed an image processing program with OpenCV2 to provide information to Stockfish, a chess engine.
  - Established communication between Arduino and the computer using Python, ensuring smooth data transfer and control.
  - Implemented reverse kinematics using a linear programming algorithm, Sequential Linear-Quadratic Programming (SLQP), to enable precise movements of the robot arm.

- **Autonomous Differential Drive Robot**
  Personal Team Project *September, 2022 – May, 2023*
  - Programmed PID controllers and algorithms for reverse kinematics and odometry, contributing to the robot's precise and efficient movements.
  - Deployed ROS on Ubuntu to establish seamless communication between the Raspberry Pi and STM32, enhancing the robot's capabilities and functionalities.

Education

- **National Institute of Applied Science and Technology** **Tunis, Tunisia**
  Engineering Degree in Industrial IT and Automation *2020 - 2025*

Skills and Tools

- **Programming Languages:**
  Python, C++
- **IDE:**
  Visual Studio Code

- **Operating Systems:**
  Windows, Linux
- **Version Control:**
  Git & Github

- **Familiar Microcontrollers:**
  STM32, Arduino, ESP32.
- **Misc Tools and Sofwares:**
  Grafana, ROS, MQTT

Languages

English: Fluent **French :**Proficient **Arabic:**Native

Extracurricular Activities

Member of AeRobotix INSAT, a Robotics Club *September, 2021 – September, 2024*
Member of an Eurobot 2023 Team *September, 2022 – May, 2023*