

Mohamad Nasser

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Education

42 Beirut – Level 4 **2025 – Present**
42 Core Curriculum – Architecture of Digital Technologies Program

Lebanese American University **2020 – 2024**
Bachelor in Mechatronics Engineering

Experience

AlMasar **April 2025 – July 2025**
DevOps & Java Development Intern *Zalka, Lebanon*

- Researched and evaluated various tools for automating UI testing within a CI/CD pipeline; selected Selenium for its recorder and multi-language support.
- Developed a Java/JUnit test suite within a Maven project; integrated with Jenkins and GitHub for automated test execution.
- Connected Jenkins with Jira and Xray to enable enhanced test reporting, traceability, and test management.
- Applied advanced Java programming concepts, including POJO classes, design patterns, Interfaces, and static members, to practical development scenarios.
- Developed a comprehensive backend project using Spring Boot, including database creation and management with MySQL Workbench, and implementing API calls.

Inmind.ai **July 2024 – August 2024**
Robotics Intern *Mkalles, Lebanon*

- Gained proficiency in Git and Docker for version control and containerization.
- Enhanced skills in Python and C++, focusing on robotics applications. Learned and applied ROS 2 concepts, including creating publishers, subscribers, services, clients, actions, and action clients in both Python and C++.
- Acquired experience with Gazebo for robotics simulation and RViz for visualization and debugging.
- Completed various ROS 2-based projects, such as designing a robot that autonomously picks up and disposes of Pepsi cans, and a robot that navigates around obstacles using the Virtual Force Field VFF method.

Projects

Function Calling System with LLMs | *Python, Small LLMs*

- Developed a system to translate natural language prompts into structured function calls with typed arguments.
- Implemented constrained decoding to guarantee 100% valid JSON outputs using a small LLM model.
- Applied structured output generation to reliably extract and execute instructions from text prompts.

Restaurant Web Application | *Java, Spring Boot, MySQL*

- Built a full-stack restaurant management app with a Spring Boot REST API and a React frontend.
- Designed a normalized MySQL database and implemented efficient data access with JPA and DTOs.
- Integrated a real-time currency conversion feature via external API and optimized performance using in-memory caching.
- Versioned and maintained the project using Git.

Can Retrieval and Placement Robot | *Python, C++, ROS 2*

- Developed a ROS 2-based robot that autonomously searches for a Pepsi can, navigates to it, and then locates a QR code with a drop-off zone to deposit the can. The robot's behavior is controlled using a behavior tree, enabling efficient decision-making and task execution.

Obstacle Avoidance Robot | *Python, C++, ROS 2*

- Developed a ROS 2-based robot that utilizes the Virtual Force Field (VFF) method for obstacle avoidance, enabling the robot to navigate complex environments by simulating repulsive forces around obstacles while maintaining a smooth and efficient path.

Technical Skills

Languages: Python, Java, C, C++, MySQL, Matlab

Computer Aided Design: AutoCAD, SolidWorks

Developer Tools: VS Code, Eclipse

Technologies/Frameworks: Linux, Jenkins, GitHub, SpringBoot

Robotics Software: ROS 2, Gazebo, RViz