# Ahmad Alahmar

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Passionate and motivated Mechatronics Engineer with experience in both hardware design and software development for Robotic and UAV systems. Always seeking new opportunities to leverage my expertise and vision of a new world aided by machines.

**Languages:**
Arabic – Native
English - Proficient
French - Basic

**Technical Skills**: CAD (Autodesk Inventor), Arduino, Raspberry Pi, Jetson, Pixhawk, PX4 Autopilot, Ardupilot, Sensor Integration, Python, MATLAB, Gazebo, Simulink, ROS2, Linux OS, Technical documentation.

**Soft Skills:** Team Leading, Planning, Decision Making, Multi-Tasking, Problem Solving, Reporting Progress.

## EDUCATION

**Higher Institute for Applied Sciences and Technology**                                        **Damascus, Syria**

Master of Science in Control Systems (Incomplete due to pursuing professional goals)          Dec 2022 – Aug 2023
- 12+ courses of control systems math and algorithms (Adaptive control, Fuzzy control, Optimal control, Analog control).
- Completed 100+ hours of lab-based experiments.
- Group collaboration on scientific reports and lab experiments.

**Higher Institute for Applied Sciences and Technology**                                        **Damascus, Syria**
Bachelor's degree in Mechatronics Engineering                                                  Oct 2017 – Aug 2022
- 100+ courses in the span of 5 years including:
  Finite Element Method, Computer Aided Design (CAD), Image Processing, Industrial Automation with PLC, Advanced Mathematics, Advanced electronics, Computer aided Manufacturing (CAM) and User Graphic interface development (C#).
- As Head of the Electro-Mechanical Systems Department's student committee for three consecutive years coordinated the communication between the department and the students, creating timelines for exams and study programs.
- Member of the robotics club for two years.

## WORK EXPERIENCE

**Invdro** (A drone development startup)                                                        **Riyadh, Saudi Arabia**
Technical Team Lead                                                                             Jan 2024 – Present
- Led the team of 3 people ensuring seamless hardware-software integration.
- Led weekly stakeholder meetings to share updates, gather requirements, and address technical challenges.
- Managed development from design to implementation, ensuring all specifications and deadlines were met.
- Organized and hosted a drone hackathon in the university of Jeddah, Saudi Arabia, with 35+ participants across 10 teams. Created the assessment point system, the full schedule and the overall workflow of the 3-day hackathon.
- Participated in **LEAP 2024**, presenting our **autonomous drone solution** to government officials, investors, and tech leaders.

Drone Developer                                                                                Jan 2024 – Present
- Led the development of an autonomous indoor drone from design to testing, delivering a fully functional prototype in 8 months.
- Utilized ROS2 and Python to develop and implement control algorithms. Created 3 ready-to-use ROS2 packages with more than 32 nodes and launch files.
- Increased the drone flight time by more than 40% and decreased the weight of the initial drone prototype by 30% by optimizing the components and design reliability.
- Tested and debugged the drone in a warehouse for more than 4 months, ensuring real world functionality and stability.
- Maintained clean workflow and knowledge transfer within the technical team by documenting the project through more than 15 user manuals, technical reports, and GitHub repositories.

**Expentech L.L.C.**             **Damascus, Syria**
Mechanical design engineer          Dec 2022 – Jun 2023
- Led a 7-member cross-functional team that prototyped a snake robot for finding the survivors and mapping the landscape affected by natural disasters or conflicts.
- Designed the robot's shape and functions for efficient navigation in confined spaces, boosting performance by 30% vs initial prototype.
- Partnered with two businesses to successfully secure the funding for the robot design.

**Viana Education Center**             **Damascus, Syria**
Guitar Trainer          Sep 2021 – August 2022
- Taught basic guitar skills to individuals and groups.
- Designed a guitar course for students with different levels of skill.

**Freelance**             **Damascus, Syria**
Private Tutor          Sep 2021 – August 2022
- Taught college level courses to 10+ students in different university majors and specialties including math, physics, programming, electrical circuits and mechanical design.

English/Arabic and Arabic/English Series translation          Dec 2019 – August 2022
- Translated over 60 episodes of various series from Arabic to English and vice versa

**Syrian Trust for development**             **Damascus, Syria**
Volunteer          Jun 2018 – Dec 2018
- Participated in tree planting campaigns in two towns in Damascus suburbs.
- Cleaned roads and public facilities of multiple Syrian towns.
- Helped refugees during the war in Syria, assisting displaced families by coordinating food and medical supply distribution in refugee camps.

## PROJECTS

**Solar Air Heating**          Nov 2014 – Jun 2015
- A device that uses solar energy to heat the air.

**The Smart Parachute**          Jan 2017 – Jun 2017
- A prototype of an electrically powered parachute that can reduce the risks of landing.

**Design of a 3-axis laser cutter**          Jan 2021 – Mar 2021
- Developed a 3D model of a 3-axis laser cutter with a 2.5x1.5x0.25-meter workspace, designed for precision cutting and scalability.

**Design and implementation of a 3D wire bending machine**          May 2021 – Aug 2021
- Designed a machine capable of forming three-dimensional shapes using metal wire, enhancing precision and versatility in fabrication processes.
- Participated in FMEE Tech fair (Damascus, Syria, Oct 2021) and HITECH fair (Damascus, Syria, Jun 2022)

**Design and implementation of Crawling Rolling Robot**          Mar 2022 – Aug 2022
- Developed a shape-shifting robot capable of crawling over rough terrains and transforming into a cylindrical form for high-speed rolling, adding adaptivity and efficiency in varied environments.
- Won first place at **FMEE** Tech fair (Damascus, Syria, Oct 2022), and Third place at **HITECH** fair (Damascus, Syria, Jun 2023), and Second place at **Al-Basel fair for innovation and creativity** (Damascus, Syria, Sep 2023).

**Sedrah Hackathon**          Jun 2025
- Created a working prototype of a Smart Waste Management System in three days. The system consisted of an Android application and a web-based dashboard with a microcontroller and ultrasonic sensors integrated with the system.