

Laith Tuffaha

Mecahtronics Engineer | Amman, Jordan | (+962) 798043487 | tuffahaalaith@gmail.com | linkedin.com/in/laith-tuffaha

SUMMARY

Creative, motivated, and ambitious mechatronics engineer, hard worker, driven by results and always striving to deliver high-quality outcomes where the results are always the focus, fueled by a passion for robotics, control systems, and artificial intelligence. Started my career since I was at university, where I focused on growing both my technical and personal skills. During this journey and continuing until now I've had the chance to achieve a lot of milestones as an engineer, entrepreneur, and volunteer leader.

EDUCATION.

The Hashemite University Bachelor of Mechatronics Engineering

Al-Zaraqqa, Jordan
2024

- Cumulative GPA: Very Good
- Institute of Electrical and Electronics Engineers - IEEE (General Member, +3 years)

Al-Ah`liyya Amman University Schools High School

Amman, Jordan
2019

- Cumulative Score: (91.2/100)

WORK EXPERIENCE

Mazaari Autonomous Robotics System (MarsRobotics Company)

Irbid, Jordan

■ Guidance, Navigation & Control Engineer (GNC)

Feb, 2024 - Present

- Contributed to the restructuring and development of the MarsFly autopilot (AP) system, and design it to be compatible with DO-178C software safety standards.
- Designed and implemented high-level mission systems, including target tracking, position estimation, sensors estimation, and surveillance missions such as traffic landing and area scanning.
- Worked on state estimation and tuned control responses using PID controllers and ANSYS SCADE.
- Completed a 40-hour certified training course in ANSYS SCADE and ANSYS Architecture by Ansys Inc., for DO178C code implementation and system architecture design.
- Implemented automatic C code generation using MATLAB and integrated it onto hardware, thorough SIL (Software-in-the-Loop) and HIL (Hardware-in-the-Loop) testing
- Developed and deployed AI-based detection and tracking models for real-time video streaming and visual-based navigation missions.
- Created my custom Autopilot system, successfully integrating it with simulation platforms such as FlightGear, X-Plane, and QGroundControl .
- Worked on data parsing and protocol handling using CAN, UART, and UDP
- Worked on the development of UAV mathematical modelling, atmospheric model, orbital modelling and simulation, and wind modelling and estimation

PNIN Tech Startup company

Amman, Jordan

■ R&D Engineer, AI, and Machine Learning

June 2023 - July 2024

- Worked on developing and optimizing Kalman filter and implemented position estimation algorithm using IMU sensor.
- Worked on gait analysis, including cycle estimation, feature extraction, and pattern implementation
- Researched and reverse engineering of Functional Electrical Stimulation (FES) systems, and applying forward-movement estimation pulses.
- Signal filtering including (Low pass, High pass, and complementary filters) and event detection based on human motion dynamics.
- Built mathematical models to simulate human motion using MATLAB and OpenSim softwares

- Developed AI models using YOLO and TensorFlow for car plate and VIN detection systems
- Created a mobile app using MAUI. NET for automatic identification from user-submitted photos.
- Employed Tesseract, Easy OCR, and image processing for character recognition.
- Implemented online hosting server using Flask and localhost protocols.
- Employed image processing techniques and image filtering to enhance and analyze images for accurate recognition and detection.
- Worked on voice recognition and signals analysis and filtration.

ADDITIONAL

Soft Skills: Leadership, teamwork, and consistently driving project improvements

Software Skills: MATLAB, Python, Ansys Scade Suite, C, C++, Linux, ROS protocols, HTML, Proteus, NI Multisim, Arduino, AutoCAD, Eagle, Fusion 360, SolidWorks, EasyEDA, SketchUp, Open Sim, Automation studio, Adobe Illustrator, Adobe Photoshop, Microsoft office.

Languages: Native language in Arabic, and professional working proficiency in English.

Certifications and Training:

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| • Deep Learning and NN | 20 credit hours / Pioneers Academy |
| • Machine Learning | 40 credit hours / SHAI for AI |
| • Programming with Python | 24 credit hours / STEAM Center |
| • ROS (Robotics Operating System) | 15 credit hours / Udemy |
| • TensorFlow, YOLO, and Integration with Flask | 13 credit hours / Udemy |
| • Digital Fabrication and PCB design | 2 months / Luminus Education Group |
| • PLC and SCADA Systems | 36 credit hours / Engineering Geniuses |
| • Unmanned Aerial Vehicles | 15 credit hours / Mars Robotics |
| • Arduino 101 and 102 | 40 credit hours / Zinc Digital village |
| • Entrepreneurship and Business models | 24 credit hours / Abdul Hameed Shoman |
| • Robotics Specialization | 2 months / Coursera |
| • Controlling and modeling-feedback-systems | 30 hours / Coursera |

Participation and Achievements

- Obtained the first place for best Python project for a school data entry system at Zain Bootcamp.
- Earned 2nd place in the ball collector competition during IEEE RAS Robotics Week at Hashemite University in 2021.
- Obtained the Creativity Award at the Arab Open Championship for Robotics in Sharm El Sheikh.
- Conducted a 30-credit hour Arduino training course.
- Conducted a 15-credit hour MATLAB training course
- Won first place in “IEEE PITCHINNO”, the Jordanian Entrepreneurship Competition, in its fourth edition, affiliated with “IEEE” in the Middle East, Africa, and Europe during my work at PNIN.
- Was one of the judging panels for the first version of the Maze Solver Robot competition in Jordan, IEEE Robotics and Automation Society
- Won third place in the IEEE Region 8 Entrepreneurship finals during the IEEE Region 8 Students & Young Professionals (R8 SYP) Congress – Grenoble France 2024.

VOLUNTEERING CONTRIBUTIONS

Chairperson of the Institute of Electrical and Electronics Engineers Hashemite University student branch, (IEEE HU) **Sep 2023 - Sep 2024**

1. Led IEEE HU SB with 80+ officers working on four different technical chapters (societies), a non-technical affinity group, and a subcommittee for educational activities.
2. Overlook all branch issues, including administrative and financial matters, and responsible for branch officers (recruiting and training). and held regular meetings of the branch teams.

Vice chair of the Engineering In Medicine And Biology Chapter, IEEE Hashemite University student branch, (IEEE EMBS HU) **Dec 2022 - Sep 2023**

1. Led the organizing team of the MEDIVERSE 2023 event held at Hashemite University with +700 attendees from all Jordan Universities Besides IEEE officials including Jordan Section, Region 8 (Europe, Middle East, and Africa), and International IEEE Offices.
2. Led the organizing team of the Health Tech Hustle competition of its first version held for biomedical engineering startups with +200 attendees from all of the Jordanian Universities
3. Develop and implement strategies for the society's growth and impact on society, manage meetings and coordinate events, and give sessions in image processing and tumor detection using AI.

Event Coordinator of the Engineering In Medicine And Biology Chapter, IEEE Hashemite University student branch, (IEEE EMBS HU) **Sep 2022- Dec 2023**

Managing and preparing events, conducting sessions, handling logistical preparations, and contact with various companies for collaborations.

REFERENCES

Provided when asked.