



Fadel Tarhini

Mechanical Engineer,
Robotics Engineer,
Ph.D. Student

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About Me

A dedicated, disciplined, and intellectual PhD student, with a diverse skill set in design and programming. Proven to adapt, work in a team, and solve problems with critical thinking. Currently seeking opportunities in robotics, autonomous systems, control systems, and vehicle engineering.

Languages

- Arabic - Native
- English - C2
- French - B1

Technical Expertise

- | | |
|--------------------|--------------------|
| Autonomous Systems | Robotics |
| Control Theory | Vehicle Dynamics |
| Control Allocation | Optimization |
| Robust Control | Optimal Control |
| Motion Planning | Decision-Making |
| System modeling | Simulation |
| Project Management | Scientific Writing |

Software & Tools

- Programming Languages:** MATLAB, Python, C, Assembly Language, HTML, CSS
- Simulation and Modeling:** Simulink, SCANer Studio, SolidWorks, AutoCAD, COM-SOL Multiphysics
- Optimization and Control:** YALMIP, OSQP, ANSYS, Veloview
- Document Preparation:** LaTeX, Microsoft Office Suite

Education

Study

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| Currently | Doctorate in Automation and Robotics | Université de Technologie de Compiègne (UTC) |
| | Ph.D. thesis on the development of energy economic complete control architecture for an autonomous in-wheel driven electric vehicle. | |
| 2021 – 2022 | Master 2 in Autonomous and Robotic Intelligent Systems | UTC |
| | Focuses on the software aspects of autonomous technological systems in mutual interaction, known as systems of systems. | |
| 2017 – 2022 | Mechanical Engineering | Lebanese University (LU) |
| | General knowledge in Automatic Control, Sensors, Automobiles, Energy, Thermodynamics, Heat transfer, Materials, Construction and Machine design. | |
| 2016 – 2017 | Lebanese Baccalaureate | Al Sabbah High School |
| | Lebanese Baccalaureate degree in General Sciences. | |

Experiences

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|-----------------------|---|-----------------|
| Apr. 2024 - Sep. 2022 | Master Internship Supervisor | Heudiasyc - UTC |
| | Supervisor of an internship of a Master 2 Student at UTC. The internship aimed to develop an MPC-based lateral controller for autonomous vehicles. | |
| Feb. 2022 - July 2022 | Master Internship | Heudiasyc - UTC |
| | Final Year Project Internship in developing a multi-objective control architecture encompassing lateral and longitudinal control, as well as stability and maneuverability control. | |

Publications

- F. Tarhini, R. Talj and M. Doumiati, "Safe and Energy-Efficient Jerk-Controlled Speed Profiling for On-Road Autonomous Vehicles," in IEEE Transactions on Intelligent Vehicles, 2024, doi: [10.1109/TIV.2024.3416551](https://doi.org/10.1109/TIV.2024.3416551).
- F. Tarhini, R. Talj and M. Doumiati, "Dual-Level Control Architectures for Over-Actuated Autonomous Vehicle's Stability, Path-Tracking, and Energy Economy," in IEEE Transactions on Intelligent Vehicles, vol. 9, no. 1, pp. 287-303, Jan. 2024, doi: [10.1109/TIV.2023.3333273](https://doi.org/10.1109/TIV.2023.3333273).
- F. Tarhini, R. Talj and M. Doumiati. "Dynamic and real-time continuous look-ahead distance for autonomous vehicles: an explicit formulation". Vehicle System Dynamics, vol. 62, no. 9, pp. 2210-2236, 2023. doi: [10.1080/00423114.2023.2280215](https://doi.org/10.1080/00423114.2023.2280215).
- F. Tarhini, R. Talj and M. Doumiati, "Hybrid energy-efficient local path planning for autonomous vehicles in dynamic environments", 2024 IEEE 27th International Conference on Intelligent Transportation Systems (ITSC), Edmonton, Canada, 2024.
- F. Tarhini, R. Talj and M. Doumiati, "Driving Towards Energy Efficiency: A Novel Torque Allocation Strategy for In-Wheel Electric Vehicles," 2023 IEEE 26th International Conference on Intelligent Transportation Systems (ITSC), Bilbao, Spain, 2023, pp. 1022-1029, doi: [10.1109/ITSC57777.2023.10421905](https://doi.org/10.1109/ITSC57777.2023.10421905).
- F. Tarhini, R. Talj, and M. Doumiati, "Multi-objective control architecture for an autonomous in-wheel driven electric vehicle". IFAC-PapersOnLine, 56(2):11470-11476, 2023, doi: [10.1016/j.ifacol.2023.10.436](https://doi.org/10.1016/j.ifacol.2023.10.436)
- F. Tarhini, R. Talj, and M. Doumiati, "Adaptive Look-Ahead Distance Based on an Intelligent Fuzzy Decision for an Autonomous Vehicle," 2023 IEEE Intelligent Vehicles Symposium (IV), Anchorage, AK, USA, 2023, pp. 1-8, doi: [10.1109/IV55152.2023.10186791](https://doi.org/10.1109/IV55152.2023.10186791)