Lyes **Saidi**

PH.D. COMPUTER SCIENCE · AUTOMATED VEHICLES AND ROBOTICS

Compiègne, France

(+33) 776727492 | saidi.lyes.97[at]gmail[dot]com | saidilyes.github.io/ | saidilyes | lyes-saidi

Summary

I am currently a temporary lecturer at the Université de Technologie de Compiègne (UTC). With a master's degree in Transport, Mobility, and Network, I pursued a Ph.D. in computer science. In addition to being passionate about various aspects of engineering, my main passion lies in automation and robotics, linked with a strong interest in mobility, especially in optimizing energy consumption for hybrid and electric vehicles.
Looking forward, I am eager to join a team involved in stimulating projects and creative ideas. I am excited about the opportunity to work on impactful projects that push the boundaries of research and engineering possibilities.

Projects

Temporary teaching and research associate

Mar. 2024 - Aug. 2024

UNIVERSITÉ DE TECHNOLOGIE DE COMPIÈGNE (UTC) — *France*

| Tools: Matlab/Simulink, SCANeR Studio, Python, PHP, SQL, HTML/CSS, Latex, Git

- Research on cooperative and altruistic decision-making strategies for resolving conflict situations in highway environments.
- Teaching at UTC: coding, web development, data structures, algorithms (60 hours), algorithm design and Python programming (24 hours), sensors for intelligent systems (10 hours), applied mathematics (14 hours).

PH.D. IN COMPUTER SCIENCE | ROBOTICS AND AUTONOMOUS VEHICLES

Topic: Cooperative Multi-Controller Architecture (C-MCA) for AVs driving

Oct. 2020 - Jan. 2024

HEUDIASYC -UMR-CNRS 7253 - UTC — *France*

| Tools: Matlab/Simulink, SCANeR Studio, Unreal Engine, Latex, Git

- Development of a multi-vehicle navigation strategy for highway merging based on multi-agent formation approaches.
- Design of a safe and energy-efficient decision-making and control architecture for autonomous multi-vehicle systems.
- Creation of a simulation environment to test multi-vehicle systems using Matlab/Simulink, SCANeR Studio, and Unreal Engine.

INTERNSHIP IN THE RESEARCH AND DEVELOPMENT DEPARTMENT

Topic: Energy-efficient driving strategy for hybrid vehicles

Mar. 2020 - Sep. 2020

POLYMONT ENGINEERING — *France*

| Tools: Matlab/Simulink, Fuzzy Logic Toolbox, System identification toolbox, LaTeX, Git

- Modeled the energy components of the hybrid vehicle.
- Designed a control architecture based on fuzzy logic for energy management in hybrid vehicles.
- Evaluated the performance of the proposed architecture using standardized driving cycles (e.g., NEDC, WLTC, etc.).

RESEARCH LABORATORY INTERNSHIP

Topic: Control strategy for a safe and smooth transition between automated and human driving

Oct. 2019 - Dec. 2019

LAMIH-UMR-CNRS 8201, INSA HAUTS-DE-FRANCE, UPHF — *France*

| Tools: Matlab/Simulink, SCANeR Studio, LaTeX, Git

- Designed a decision-making layer to switch between automated and human driving.
- Developed an adaptive control method using haptic feedback applied to a continuous model of the steer-by-wire system.
- Created an experimental protocol to test the performance of the proposed control strategy.

International congress with proceedings

2023 — **[ITSC'23]**. Saidi, L., Talj, R., Adouane, L.. ***On-Ramp Merging on Highway for Cooperative Automated Vehicles based on an Online Reconfigurable Formation Control Approach***. In the IEEE 26th International Conference on Intelligent Transportation Systems (ITSC).pp. 2692-2697. *Bilbao, Spain*

2023 — **[MMAR'23]**. Saidi, L., Adouane, L., Talj, R.. ***Altruistic Coordination Strategy for On-Ramp Merging on Highway of a Formation of Cooperative Automated Vehicles***. In the 27th International Conference on Methods and Models in Automation and Robotics (MMAR).pp. 362-369. *Międzyzdroje, Poland*

2022 — **[ITSC'22]**. Saidi, L., Adouane, L., Talj, R.. ***CORM: Constrained Optimal Reconfiguration Matrix for Safe On-Ramp Cooperative Merging of Automated Vehicles***. In the IEEE 25th International Conference on Intelligent Transportation Systems (ITSC).pp. 2783-2790. *Macau, China*

International congress

2023 — **[VAMS'23]**. Saidi, L., Adouane, L., Talj, R.. ***Cooperative Decision-Making for Safe On-Ramp Merging on Highway for Connected Automated Vehicles***. International Symposium on the Verification of Autonomous Mobile Systems (VAMS). *Paris, France*

National congress

2022 — **[CT ATT'22]**. Saidi, L., Adouane, L., Talj, R.. ***Safe and Smooth Onramp Merging on Highway Strategy for Cooperative Automated Vehicles***. Journées du Comité Technique Automatique et Transport Terrestre (CT ATT). *Valenciennes, France*

2021 — **[JJCR'21]**. Saidi, L., Adouane, L., Talj, R.. ***Toward a Robust and Safe Cooperative Highway Navigation of Multi-Vehicles Systems***. Journée des Jeunes Chercheurs en Robotique (JJCR). *Paris, France*

Honors & awards

2023 — **MMAR 2023 Young Author Prize.** In the 27th International Conference on Methods and Models in Automation and Robotics (MMAR). *Międzyzdroje, Poland*

2022 & 2023 — **Speaker at the [MMAR'23] and [ITSC'22] congresses.** *Poland & China*

Education

Ph.D. in Computer Science | Robotics and Autonomous Vehicles

Oct. 2020 - Jan. 2024

Université de Technologie de Compiègne (UTC) — *Compiègne, France*

| Tools: Matlab/Simulink, Python, C/C++, SCANeR Studio, Unreal Engine, Bridge, Latex, Git, and more.

Keywords:Autonomous vehicles, Trajectory planning, Control theory, Linear and Non-linear optimization, Multi-criteria optimization, Cooperative navigation, Decision-making for dynamic driving, Energy-efficient driving.

Master's degree in Transport, Mobility and Network

Jan. 2019 - Sep 2020

Université Polytechnique Hauts-de-France (UPHF) — *Valenciennes, France*

| Tools: Matlab/Simulink, Ada, C/C++, SCANeR Studio, Latex, Git, and more.

Keywords: System modeling, Control theory, Trajectory planning, Linair and Non-linear optimization, Fuzzy logic theory, Advanced Driver Assistance System (ADAS), Autonomous vehicles, Hybrid vehicles, Energy efficient strategies for driving.

Skills

Programming skills	MATLAB, Python, ADA, C/C++, HTML, CSS, PHP, SQL.
Simulation skills	Simulink, SCANeR Studio, Unreal Engine.
Writing/Organization skills	MS office, Latex, Reveal.js
Platforms/libraries	Git, Automated driving toolbox, System identification toolbox, Fuzzy logic toolbox