



# Safety of Intelligent and Autonomous Vehicles: Formal Methods vs. Machine Learning approaches for reliable navigation (**SIAV-FM2L**)

IROS'24, **SIAV-FM2L Workshop**, Abu Dhabi, Emirats Arabes Unis  
15<sup>th</sup> October, 8h00-12h00, Room 6

## Workshop organizers



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## Main topic of interest:

The workshop encourages contributions coming from applications of formal methods or machine learning approaches reporting on original research, work under development, experimental results and high fidelity simulations protocols, related, but not limited, to one of the following topics:

- Safety modeling, analysis, validation and testing
- Motion planning for safe maneuvering
- Control architecture design and standardization for flexible navigation and guidance
- Risk assessment and management under uncertainty
- Long-term autonomy
- Safety and flexibility in connected and cooperative I/AV
- Simulation benchmarking for characterizing safety
- Model-driven and data-driven methods increasing safety, reliability, and flexibility
- Safety in advanced driver assistance systems (ADAS)
- Perception, localization, and map-building methods for safe applications
- Applications of I/AV in the public, freight and agriculture transportation domains
- ...

**Keywords:** Intelligent/autonomous vehicles; Safe maneuvering; Safety guarantees; Control architecture, Motion planning; Risk assessment and management; Long-term autonomy; Safe connected and cooperative vehicles; Model-based approaches; Data-driven approaches; Safety in ADAS.



- Understandable / explicable overall control architecture (tight and clear link between perception-decision-action), is it indispensable?
- Hybrid Architectures (Machine Learning and Formal Approaches) are unavoidable?
- Toward new paradigms to standardize and to manage / to evaluate the autonomy and the safety of vehicles, is it really the case?
- Smart infrastructure as indispensable mean to reach enhanced safety, invest or forget?
- What about the market resilience regarding the difficulty to ensure 100% safety of autonomous vehicles (level 3 to 5)? How to fill the gap and to reach the user acceptance?

# Many thanks for your participation!