



SOFTWARE INTENSIVE SYSTEMS

Advance safety in AI-based mobility

Training and certification for autonomy
safety assurance professionals

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Course overview

Artificial intelligence (AI) plays a significant role in the automotive industry as it competes to develop and market vehicles that can perform tasks that previously required an experienced driver. Today, carmakers and suppliers must develop operational and tactical functions required to operate a vehicle in on-road traffic and meet safety and performance expectations.

This machine learning (ML) training for automotive safety assurance professionals provides guidance for incorporating ML components into state-of-the-art safety frameworks, including Functional Safety (FuSa) and Safety of the intended functionality (SOTIF). This training also includes the reference information of novel autonomy safety standards such as:

- UL 4600, the Standard for Evaluation of Autonomous Products
- ISO/TR 4804:2020, Road Vehicles - Safety and Cybersecurity for Automated Driving Systems - Design, Verification and Validation
- ISO/IEC DTR 5469, Artificial intelligence - Functional safety and AI systems
- ISO/AWI PAS 8800, Road Vehicles - Safety and Artificial Intelligence
- ISO/IEC TR 24029-1:2021, Artificial Intelligence (AI) - Assessment of the Robustness of Neural Networks - Part 1: Overview
- ISO/IEC DIS 24029-2, Artificial intelligence (AI) - Assessment of the Robustness of Neural Networks - Part 2: Methodology for the Use of Formal Methods

Topics

Day 1

- Introduction to training topics
- Automotive safety and AI standards
- Deployment of AI into systems
- Factors to consider for AI safety
- Running example
- Specification and design (SOTIF-specific)
- AI safety culture
- Concept phase
- System development phase

Day 2

- Hardware development phase
- Software development phase
- Verification and validation (V&V) strategy
- Software verification phase
- Hardware verification phase
- System verification phase
- Vehicle verification and validation phase
- Assessment
- Operations, decommissioning, service and maintenance

Objectives

This workshop will help you:

- Apply ML concepts within FuSa and SOTIF frameworks
- Make progress toward autonomy safety problems by developing safer, more robust ML algorithms
- Gain a better understanding of how to define, specify, develop, evaluate, deploy and monitor ML algorithms in the context of autonomy safety
- Strengthen your skills around ML safety analysis to support completeness and correctness, advance autonomous vehicle safety and reach a threshold of acceptable risk

Target audience

This training is ideal for engineers working with advanced driver assistance systems (ADAS) and autonomous vehicles (AVs), such as automotive engineers, safety engineers, data scientists, project leaders and testing personnel.

Prerequisites

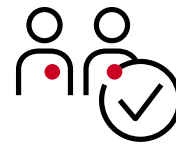
- UL Certified Artificial Intelligence Professional - Foundations training or hands-on experience developing ML models
- Previous knowledge of SOTIF (ISO 21448) and automotive functional safety (ISO 26262)



Why choose UL Solutions?

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