

Generative AI in Automotive Training

COURSE CONTENT

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About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

About Course

Generative AI in Automotive Training by Multisoft Systems is designed to equip professionals with the knowledge and skills to harness artificial intelligence for innovation in the automotive sector. This comprehensive program covers AI-driven applications across design, manufacturing, testing, and autonomous systems.

Module 1: Introduction to Generative AI and the Automotive Industry

- ✓ Understanding Generative AI concepts (e.g., neural networks, deep learning, transformers).
- ✓ Overview of the automotive industry's digital transformation and the role of AI.
- ✓ Specific applications of Generative AI in automotive.
- ✓ Distinction between Generative AI and other AI approaches in the automotive context.

Module 2: Core Technologies and Techniques

- ✓ Focus on relevant algorithms for automotive applications, such as convolutional neural networks (CNNs) for image recognition and recurrent neural networks (RNNs) for time series analysis.
- ✓ Understanding how NLP techniques are used for in-car virtual assistants, customer service, and more.
- ✓ Exploration of specific generative models like Variational Autoencoders (VAEs), Generative Adversarial Networks (GANs), and diffusion models.
- ✓ Techniques for preparing and managing the vast datasets required for training generative models, including data augmentation and transfer learning.

Module 3: Applications in Automotive Design and Engineering

- ✓ Using AI to create innovative and optimized automotive designs, exploring a wider range of possibilities than traditional methods.
- ✓ How Generative AI tools can enhance and streamline CAD/CAM workflows.
- ✓ Utilizing AI for virtual testing and simulation, including CAE and CFD, to predict performance and identify potential issues early in the design process.

- ✓ Applying AI to identify optimal materials for different automotive components based on desired properties and performance.

Module 4: Applications in Vehicle Development and Manufacturing

- ✓ Analyzing vehicle sensor data to predict potential failures and optimize maintenance schedules.
- ✓ Utilizing AI to identify defects and anomalies in the manufacturing process.
- ✓ Using AI to optimize logistics, inventory management, and production planning.
- ✓ Implementing AI-powered systems for automated testing of various vehicle components and systems.

Module 5: Applications in Autonomous Driving and ADAS

- ✓ Using AI for object detection, lane keeping, and other perception tasks in autonomous vehicles.
- ✓ Developing AI-powered decision-making systems for autonomous navigation and control.
- ✓ Integrating data from various sensors (cameras, radar, lidar) using AI for enhanced perception.
- ✓ Utilizing AI for optimal path planning and trajectory generation for autonomous vehicles.

Module 6: Applications in Customer Experience

- ✓ Tailoring vehicle settings, infotainment, and other features based on individual driver preferences.
- ✓ Implementing advanced virtual assistants for voice control, navigation, and other in-car tasks.
- ✓ Using AI to analyze customer data and provide personalized recommendations and offers.

- ✓ Automating customer support interactions and providing personalized service through AI-powered chatbots.