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AI on Wheels: How Self-Driving Cars Perceive, Decide, and Navigate in Smart Cities

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Abstract

Self-driving cars are becoming an important part of smart cities. They are designed to move safely without human control by using artificial intelligence, cameras, and sensors to understand the world around them.

This talk explains how these cars “see” their surroundings using computer vision, how they “think” using AI models and sensor data, and how they “act” by making real-time driving decisions. It also covers how different technologies such as deep learning, LiDAR, radar, and GPS work together to help the car find its way, follow traffic rules, and avoid obstacles.

The session will also highlight how these systems are connected with city infrastructure—like smart traffic lights and road sensors—to make transportation safer and more efficient. By the end, attendees will have a clear picture of how artificial intelligence powers self-driving cars and how this technology is shaping the future of smart city mobility.