IEEE Guide to Autonomous Vehicle Technology Course Program

Cutting-edge education, taught by the world's leading experts, from a source you trust

New! IEEE Guide to Autonomous Vehicle Technology

Automated vehicle technologies are developing rapidly, and promise to improve driving safety. While these advanced technologies offer potential benefits to drivers, uncertainty remains about efficacy and usability when users interact with these systems.

IEEE Guide to Autonomous Vehicle Technology is a seven-course program that covers foundational and practical applications of autonomous, connected, and intelligent vehicle technologies, including:

- An overview of current state-of-the-art systems, deep learning algorithms, and other intelligent approaches that promise safer and easier driving
- Advanced insight into recent developments made in human-centered design in mixed traffic scenarios
- In-depth case studies that demonstrate how to test, evaluate, and refine systems in this next era of automation
- A comprehensive look ahead at how self-driving vehicles will impact day-to-day business and operations for academic, corporate, and government organizations

This seven-course program will give organizations the information needed to prepare for the development and implementation of autonomous vehicle technologies.

IEEE Guide to Autonomous Vehicle Technology Quick Facts

Seven one-hour courses designed for professionals working in engineering, transportation, and related fields

Courses developed and peer reviewed by experts in their fields, a process that guarantees the quality of technical content

Printable IEEE CEU or PDH certificates awarded upon successful completion of the program

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IEEE Guide to Autonomous Vehicle Technology Course Program

IEEE Guide to Autonomous Vehicle Technology Course Listing

Intelligent Control of Connected and Automated Vehicles

Understand cooperative adaptive cruise control (CACC) for connected and automated vehicles, as well as explore recent developments made in human-centered CACC design in mixed traffic scenarios.

Object Visual Detection for Intelligent Vehicles

Consider the motivations for visual objects detection and recognition in Intelligent Vehicles, and methods for objects visual detection, or to find where "important" objects are in the image.

Object Visual Recognition for Intelligent Vehicles

Examine machine and deep-learning approaches for visual object detection, recognition and categorization.

Sensors

Learn the role of sensors in an AV system, properly identify typical sensors used in an AV, and assess the benefits and drawbacks of different sensing modalities.

Developing and Validating Intelligent Vehicle Control Systems

Learn how to model and evaluate performance of intelligent vehicle control algorithms using state-of-the-art techniques and concepts, especially in real-world conditions.

Cognition in Autonomous Vehicles Platforms

Consider the background concepts of human factors, the related key issues in the automated vehicle technology development, and potential methods and tools.

Decision-Making in Autonomous Vehicles

Explore how real-time decision making is performed by autonomous vehicles, especially when they cooperate with each other, in complex environments such as intersections and lane-changing operations.

Course Instructors

Courses developed in partnership with the world's leading experts in academic, science, and transportation industries, including:

- Alexander M. Wyglinski, Ph.D., SMIEEE, Worchester Polytechnic Institute and President of IEEE VTS Society
- Yue Wang, Ph.D., College of Engineering, Department of Mechanical Engineering at Clemson University
- Fabien Moutarde, Ph.D., MINES_ParisTech, PSL Research University
- Shan Bao, Ph.D., University of Michigan Transportation Research Institute
- Nasser L. Azad, Ph.D., P.Eng., Smart Hybrid and Electric Vehicle Systems (SHEVS) Laboratory at Waterloo University
- Steve Vozar, Ph.D., Research Fellow, APRIL Robotics Laboratory at University of Michigan

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