AI Applications for Road Safety Inspections

August 25 – August 29, 2025
Tirana, Albania

Background

This interactive IRF AI Applications for Road Safety Inspections training program provides extensive and detailed information regarding artificial intelligence principles, advantages, and limitations. The course includes introduction to principles of machine learning and generative AI applications and how they are integrated in safety inspections of roadways. Coding using Python language and how it could benefit industry professionals in data analysis for optimized decision making will be presented. The learners will work through detailed examples and case studies for AI applications in enhancing road safety for industry professionals and roadway commuters

Learning Objectives

- ✓ Principles of artificial intelligence will be introduced for the course participants including AI, Machine Learning (ML), and Generative AI
- ✓ Learners will be introduced to safety principles in roadway construction, routine, and protective maintenance (preservation)
- ✓ Participants will be introduced to data collection and data analysis principles for optimized decision making
- ✓ Participants will receive introductory training to coding using Python and how it's integrated in roadway safety inspection and maintenance applications.

Target Audience

- National /State Road & Transport Engineers
- Highway Engineers and Managers
- Private Consultants & Contractors

Lead Instructor

Amin K. Akhnoukh, Ph.D., P.E.
Professor, East Carolina University

Dr. Amin Akhnoukh is a professor of construction engineering and management at East Carolina University, North Carolina, USA. Dr. Akhnoukh earned his B.S. in Civil Engineering (1997) from Cairo University, M.S. in Civil Engineering from Kansas State University (2005), Kansas, USA, and Doctorate in Construction Engineering (2008) from the University of Nebraska-Lincoln, Nebraska, USA. Dr. Akhnoukh has worked as an assistant and associate professor of civil and construction engineering at the University of Arkansas at Little Rock (2009-2017) and as associate and professor of construction management (2018-todate) at East Carolina University. Dr. Akhnoukh has generated more than $3.0 million in research funding from the National Science Foundation, NASA, and State Departments of Transportation. Dr. Akhnoukh has more than 100 refereed publications in the area of construction materials, infrastructure asset management, and artificial intelligence applications in construction. Dr. Akhnoukh has more than 10 years of construction experience in Egypt, the middle east, and the United States. He is a registered professional engineer in Egypt and the United States, and a NASA and IRF Fellow.

Registration

- **2,500 USD IRF Members / Groups of 3 or more**
- **3,000 USD Non-IRF Members**

Hilton Garden Inn

Alpas Center, 146 Bulevardi,Gjergi | Tirana, Albania

https://www.hilton.com/en/hotels/tiagigi-hilton-garden-inn-tirana/?msockid=0551da00cde46a3e1fa8cf64ccab6b58

Registration: https://www.irf.global/event/ai25-rs-tirana/
For any support, please contact melabyad@IRF.global

Agenda

Monday – Friday (9:00 AM – 4:00 PM)

Day 1: Introduction to Artificial Intelligence (AI)

09:00– 10:30

- Artificial Intelligence Principles

10:30 – 10:45: Coffee/Tea Break

10:45 – 12:00

- Artificial Intelligence and Machine Learning

12:00 – 13:00: Lunch Break

13:00 – 14:30

- Generative AI

14:30 – 14:45: Coffee/Tea Break

14:45 – 16:00

- Open Discussions, Q&A, and Day 1 Conclusive Remarks

Day 2: HSE Principles in Roadway Projects

09:00– 10:30

- HSE Principles in Roadway Projects

10:30 – 10:45: Coffee/Tea Break

10:45 – 12:

- Enhancing HSE Environment in Construction, Operation, and Maintenance

12:00 – 13:00: Lunch Break

13:00 – 14:30

- Types of Roadway Distresses

14:30 – 14:45: Coffee/Tea Break

14:45 – 16:00

- Open Discussions, Q&A, and Day 2 Conclusive Remarks

Day 3: AI/LIDARs Application for Safety Inspection

09:00– 10:30

- LIDARs in Roadway Inspection

10:30 – 10:45: Coffee/Tea Break

10:45 – 12:

- AI Support for Roadway Inspection Operations

12:00 – 13:00: Lunch Break

13:00 – 14:30

- LIDAR/AI Hybrid Applications in Safety Inspections

14:30 – 14:45: Coffee/Tea Break

14:45 – 16:00

- Open Discussions, Q&A, and Day 3 Conclusive Remarks

Day 4: Machine Learning (ML) and Coding for Safety Inspection

09:00– 10:30

- Introduction to Machine Learning

10:30 – 10:45: Coffee/Tea Break

10:45 – 12:

- Integration of Machine Learning, AI, and Generative AI

12:00 – 13:00: Lunch Break

13:00 – 14:30

- Intro to Coding for AI Applications

14:30 – 14:45: Coffee/Tea Break

14:45 – 16:00

- Open Discussions, Q&A, and Day 4 Conclusive Remarks

Day 5: Applications and Case Studies

09:00– 10:30

- Python Coding Examples

10:30 – 10:45: Coffee/Tea Break

10:45 – 12:

- Inspection Case Studies using AI/ML

12:00 – 13:00: Lunch Break

13:00 – 14:30

- Open Discussions, Q&A, and Day 4 Conclusive Remarks

14:30 – 14:45: Coffee/Tea Break

14:45 – 16:00

- Certificate Distribution