



PB INSTITUTE OF RESEARCH AND TECHNOLOGY

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Nairobi - Kenya

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AI In Occupational Health Safety (OHS)

Duration: 5 days

On-Site

01 Who Should Attend

- This course is ideal for;
- Safety managers
- OHS professionals
- Data scientists
- IT professionals
- Risk managers
- Compliance officers
- Supervisors
- Team leaders
- Individuals interested in AI in OHS
- Machine learning engineers
- Data analysts



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02 About the Course

AI in OHS: Hazard Detection and Risk Prediction training equips professionals with the methodologies to leverage artificial intelligence (AI) for proactive occupational health and safety (OHS) management. This course focuses on analyzing AI applications in hazard detection and risk prediction, implementing machine learning algorithms, and understanding the impact of AI-driven insights on preventing incidents and improving safety performance. Participants will learn to develop AI models for predictive maintenance, conduct real-time hazard detection, and understand the intricacies of data integration and ethical considerations. By mastering AI in OHS, professionals can enhance safety program effectiveness, anticipate risks, and contribute to the creation of a data-driven and proactive safety culture.

The increasing availability of AI tools and data necessitates a comprehensive understanding of their application in OHS. This course delves into the nuances of machine learning, natural language processing, and computer vision, empowering participants to develop and implement tailored AI-driven safety solutions. By integrating AI innovations with OHS expertise, this program enables individuals to lead technological advancements in safety management and promote a culture of continuous improvement.



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03 Workshop Objectives

- Understand the principles and importance of artificial intelligence (AI) in OHS hazard detection and risk prediction.
- Implement techniques for selecting and deploying appropriate AI models for OHS applications.
- Understand the role of machine learning algorithms in predictive maintenance and hazard detection.
- Implement techniques for integrating AI with existing OHS data and systems.
- Understand the principles of real-time hazard detection and anomaly detection using AI.
- Implement techniques for utilizing natural language processing (NLP) for safety data analysis.
- Understand the role of computer vision in identifying visual hazards and unsafe behaviors.
- Implement techniques for ensuring data privacy and ethical considerations in AI-driven OHS applications.
- Understand the legal and regulatory requirements related to AI in the workplace.
- Implement techniques for developing and delivering training programs on AI in OHS.
- Understand the challenges and opportunities of implementing AI in diverse workplaces.
- Understand the role of employee participation in AI-driven safety initiatives.
- Develop strategies for continuous improvement in AI-driven OHS practices.

04 Module Topics

Module 1: Foundations of AI in OHS

- Principles and importance of artificial intelligence (AI) in OHS hazard detection and risk prediction.
- Understanding the relationship between AI and proactive safety management.
- Benefits of utilizing AI in OHS.
- Historical context and evolution of AI in safety.



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Module 2: AI Model Selection and Deployment

- Techniques for selecting and deploying appropriate AI models for OHS applications.
- Implementing model evaluation and selection criteria.
- Utilizing deployment strategies and model integration.
- Managing AI model deployments.

Module 3: Machine Learning Algorithms

- Role of machine learning algorithms in predictive maintenance and hazard detection.
- Understanding supervised and unsupervised learning techniques.
- Implementing regression, classification, and clustering algorithms.
- Managing machine learning models.

Module 4: Data and System Integration

- Techniques for integrating AI with existing OHS data and systems.
- Implementing API integrations and data transfer protocols.
- Utilizing data warehousing and data lake solutions.
- Managing data integration.

Module 5: Real-Time Hazard and Anomaly Detection

- Principles of real-time hazard detection and anomaly detection using AI.
- Understanding sensor data analysis and pattern recognition.
- Implementing real-time monitoring and alert systems.
- Managing real-time detection.

Module 6: Natural Language Processing (NLP)

- Techniques for utilizing natural language processing (NLP) for safety data analysis.
- Implementing text mining and sentiment analysis.
- Utilizing NLP for incident report analysis and trend identification.
- Managing NLP applications.

Module 7: Computer Vision



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- Role of computer vision in identifying visual hazards and unsafe behaviors.
- Understanding image recognition and object detection.
- Implementing computer vision for safety inspections and monitoring.
- Managing computer vision applications.

Module 8: Data Privacy and Ethical Considerations

- Techniques for ensuring data privacy and ethical considerations in AI-driven OHS applications.
- Implementing data anonymization and encryption.
- Utilizing ethical AI guidelines and policies.
- Managing data privacy.

Module 9: Legal and Regulatory Requirements

- Legal and regulatory requirements related to AI in the workplace.
- Understanding data protection and privacy laws.
- Implementing compliance strategies.
- Managing legal compliance.

Module 10: Training Programs on AI in OHS

- Techniques for developing and delivering training programs on AI in OHS.
- Implementing AI training modules and guides.
- Utilizing training aids and resources.
- Managing training programs.