KOENIG
step forward

KOENIG SOLUTIONS · COURSE OUTLINE

AI for Good: Computer Vision & NLP with Python

Learn to apply AI, computer vision and NLP techniques to tackle public health, climate change and disaster management challenges.

2 Days	3	8	5
16 HOURS	MODULES	TOPICS	HANDS-ON LABS

COURSE OVERVIEW

This course introduces the basics of artificial intelligence and machine learning, along with a problem-solving framework for applying AI to real-world challenges, starting with an air quality monitoring application for public health. It then examines the mechanisms and impacts of climate change, covering AI techniques such as time series analysis for wind power forecasting and computer vision for biodiversity monitoring. The course closes with disaster management, exploring the four phases of the disaster management cycle through case studies that apply computer vision to satellite imagery for hurricane damage assessment and natural language processing to analyse aid requests following an earthquake.

WHO THIS COURSE IS FOR

- **Data Scientists**
- **Machine Learning Engineers**
- **Public Health Analysts**
- **Climate Researchers**
- **Disaster Management Professionals**
- **Environmental Analysts**

PREREQUISITES

Pre-requisite:

- Basics of Python or any programming language

LEARNING OBJECTIVES

Course Outcomes:

- Use neural networks and other AI techniques to estimate air quality
- Develop an AI model to make wind power generation more predictable by providing forecasts 24 hours into the future
- Apply computer vision techniques to detect and classify animals for the purpose of biodiversity monitoring
- Build an image classification pipeline to perform damage assessment using satellite images taken after Hurricane
- Use natural language processing techniques to analyze trends in a corpus of text messages sent in the aftermath of earth quake

COURSE SYLLABUS

3 Modules, 8 Topics

01

Lab

AI for Public Health

TOPICS

- Introduction to the basics of artificial intelligence (AI) and machine learning (ML)
- Exploration of real-world applications of AI in the AI for Good domain
- Introduction to a problem-solving framework incorporating AI solutions

02

2 Labs

AI for Climate Change

TOPICS

- Review of mechanisms behind anthropogenic climate change
- Examination of the impact of climate change on global temperatures and weather patterns
- Understanding AI techniques contributing to climate change mitigation

03

2 Labs

AI for Disaster Management

TOPICS

- Introduction to the four phases of the disaster management cycle: Mitigation, Preparation, Response & Recovery
- Two case studies in disaster management:

HANDS-ON LABS

Practise What You Learn

#	MODULE	ACTIVITY
01	**AI for Public Health**	Creation of an air quality monitoring application
02	**AI for Climate Change**	■ Time series analysis for wind power forecasting ■ Computer vision for biodiversity monitoring
03	**AI for Disaster Management**	■ Utilizing computer vision to analyze satellite imagery from Hurricane to identify damage in affected areas ■ Applying natural language processing techniques to explore trends in aid requests following the 2010 earthquake in Haiti

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

Learn the Way That Suits You

Classroom Training | Live Online Classes (ILO) | Fly-Me-A-Trainer (FMAT) | Flexi (Self-Paced) | 1-on-1 Training

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Talk to a learning advisor about schedules, group training and customised delivery.

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