

aractech
Global Learning for Operational Leaders

DIGITAL INNOVATION AND TRANSFORMATION | DIT-054

Computer Vision Applications for Industry and Operations

Contact

+31 85 7444446
info@aractech.com
https://aractech.com

Address

Waarderweg 50, 2031 BP Haarlem - Netherlands.



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Course content

Why Attend

Cameras are everywhere in modern operations, from production lines and warehouses to construction sites, airports and city streets. Computer vision turns these images and video streams into automated inspection, safety monitoring and real-time insight.

Advances in deep learning and affordable edge hardware have made it possible to detect defects, count objects, read documents and monitor safety compliance with accuracy that often matches or exceeds human inspectors.

Course Methodology

• This training course will utilise a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. This includes an interactive mixture of lecture-led learning, case studies, practical exercises and group discussions.

Course Objectives

• Understand core principles and best practices covered in Computer Vision Applications for Industry and Operations.

• Apply practical techniques to day-to-day operational challenges.

• Build an implementation action plan suitable for your organization.

Target Audience

• Operations, production and quality managers

• Engineers and technical specialists

• HSE and security managers

• Digital transformation and innovation teams



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Course outline

Detailed course outline

Day-by-day outline for Computer Vision Applications for Industry and Operations.

Day 1 - Introduction to Computer Vision

• 09:00-09:39 | How Machines See: Pixels, colour channels and how images become data

• 09:39-10:18 | Classical Image Processing: Filters, edge detection and thresholding and where they are still useful

• 10:18-10:57 | The Deep Learning Revolution: Why convolutional networks transformed computer vision

• 10:57-11:00 | Core Vision Tasks: Classification, object detection, segmentation, tracking and optical character recognition

• 11:00-11:30 | Coffee break

• 11:30-12:06 | Core Vision Tasks: Classification, object detection, segmentation, tracking and optical character recognition (continued)

• 12:06-12:44 | Industry Use Cases: Defect detection, PPE compliance, inventory counting, licence plate recognition and crowd analytics

• 12:44-13:22 | Hardware Essentials: Cameras, lighting, lenses and edge devices that affect results

• 13:22-14:00 | Discussion: Participants identify visual inspection and monitoring tasks in their operations

Day 2 - Image Data: Collection, Labelling and Quality

• 09:00-09:30 | Data Requirements: How many images are needed and how to capture the right variety

• 09:30-10:30 | Image Capture Best Practice: Lighting, angles, resolution and environmental conditions

• 10:30-11:00 | Labelling Methods: Bounding boxes, polygons, key points and classification labels

• 11:00-11:30 | Coffee break

• 11:30-12:00 | Labelling Tools and Services: Comparing tools and managing outsourced labelling

• 12:00-12:30 | Data Quality Control: Consistent labelling guidelines and review processes

• 12:30-13:00 | Data Augmentation and Synthetic Data: Expanding datasets to improve robustness

• 13:00-14:00 | Lab: Label a sample dataset for a defect detection task



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Day 3 - Building Vision Models

- 09:00-09:30 | Image Classification Models: Using pre-trained networks and transfer learning
- 09:30-10:00 | Object Detection: How models like YOLO locate and classify multiple objects
- 10:00-10:30 | Segmentation: Pixel-level analysis for measurement and surface inspection
- 10:30-11:00 | Optical Character Recognition: Reading labels, meters, documents and serial numbers
- 11:00-11:30 | Coffee break
- 11:30-12:00 | Video Analytics: Tracking movement, counting and detecting events over time
- 12:00-13:00 | No-Code and Low-Code Vision Platforms: Building models without deep programming skills
- 13:00-14:00 | Lab: Train and test an object detection model

Day 4 - Evaluating and Deploying Vision Solutions

- 09:00-09:34 | Evaluation Metrics: Precision, recall, mean average precision and intersection-over-union
- 09:34-10:08 | Testing in Real Conditions: Pilots, edge cases and continuous validation
- 10:08-10:42 | Edge Versus Cloud Deployment: Latency, bandwidth, cost and reliability trade-offs
- 10:42-11:00 | Integration with Operations: Connecting to SCADA, MES, alarms and maintenance systems
- 11:00-11:30 | Coffee break
- 11:30-11:46 | Integration with Operations: Connecting to SCADA, MES, alarms and maintenance systems (continued)
- 11:46-12:20 | Human-in-the-Loop Review: Combining automated detection with expert confirmation
- 12:20-12:53 | Monitoring and Retraining: Keeping accuracy high as conditions change
- 12:53-14:00 | Case Study: Reviewing a full deployment of automated visual inspection



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Day 5 - Governance, Privacy and Business Value

- 09:00-09:30 | Privacy and Surveillance: Legal requirements for video analytics and facial recognition
- 09:30-10:00 | Ethics and Public Trust: Responsible use of vision technology in workplaces and public spaces
- 10:00-11:00 | Safety-Critical Applications: Reliability standards and fail-safe design
- 11:00-11:30 | Coffee break
- 11:30-12:00 | Calculating ROI: Inspection cost, defect escape, safety incidents and throughput gains
- 12:00-12:30 | Vendor Selection: Evaluating vision solution providers and platforms
- 12:30-13:00 | Scaling Across Sites: Standardising models, hardware and support
- 13:00-14:00 | Capstone: Participants present a computer vision project proposal with design, risks and business case



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Seminar dates

Available seminar dates

Live dates and pricing for Computer Vision Applications for Industry and Operations generated from the course details page.

Date	Location	Format	Fee
4 - 8 January 2027	Barcelona	Classroom	**€2,175**
11 - 15 January 2027	Cape Town	Classroom	**€1,895**
18 - 22 January 2027	Malmo	Classroom	**€3,400**
25 - 29 January 2027	Dubai	Classroom	**€2,745**
1 - 5 February 2027	Kuala lumpur	Classroom	**€2,425**
8 - 12 February 2027	London	Classroom	**€2,815**
15 - 19 February 2027	Copenhagen	Classroom	**€3,400**
22 - 26 February 2027	Istanbul	Classroom	**€2,250**
1 - 5 March 2027	Cape Town	Classroom	**€1,895**
8 - 12 March 2027	Paris	Classroom	**€2,210**



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Date	Location	Format	Fee
15 - 19 March 2027	Dubai	Classroom	**€2,745**
22 - 26 March 2027	Amsterdam	Classroom	**€2,415**
5 - 9 April 2027	Dubai	Classroom	**€2,745**
12 - 16 April 2027	Oslo	Classroom	**€4,200**
19 - 23 April 2027	Cape Town	Classroom	**€1,895**
26 - 30 April 2027	Dublin	Classroom	**€3,360**
3 - 7 May 2027	Dubai	Classroom	**€2,745**
10 - 14 May 2027	Barcelona	Classroom	**€2,175**
17 - 21 May 2027	Cape Town	Classroom	**€1,895**
24 - 28 May 2027	Frankfurt	Classroom	**€2,215**



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7 - 11 June 2027	Dubai	Classroom	**€2,745**
14 - 18 June 2027	Kuala lumpur	Classroom	**€2,425**
21 - 25 June 2027	London	Classroom	**€2,815**
5 - 9 July 2027	Manchester	Classroom	**€3,360**
12 - 16 July 2027	Dubai	Classroom	**€2,745**
19 - 23 July 2027	Cape Town	Classroom	**€1,895**
26 - 30 July 2027	Paris	Classroom	**€2,210**
2 - 6 August 2027	Dubai	Classroom	**€2,745**
9 - 13 August 2027	Amsterdam	Classroom	**€2,415**
16 - 20 August 2027	Dubai	Classroom	**€2,745**



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23 - 27 August 2027	Liverpool	Classroom	**€3,360**
6 - 10 September 2027	Cape Town	Classroom	**€1,895**
13 - 17 September 2027	Istanbul	Classroom	**€2,250**
20 - 24 September 2027	Dubai	Classroom	**€2,745**
4 - 8 October 2027	Barcelona	Classroom	**€2,175**
11 - 15 October 2027	Cape Town	Classroom	**€1,895**
18 - 22 October 2027	Frankfurt	Classroom	**€2,215**
25 - 29 October 2027	Dubai	Classroom	**€2,745**
1 - 5 November 2027	Brussels	Classroom	**€3,400**
8 - 12 November 2027	London	Classroom	**€2,815**



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15 - 19 November 2027	Istanbul	Classroom	**€2,250**
22 - 26 November 2027	Dubai	Classroom	**€2,745**
6 - 10 December 2027	Cape Town	Classroom	**€1,895**
13 - 17 December 2027	Eindhoven	Classroom	**€3,400**
20 - 24 December 2027	Dubai	Classroom	**€2,745**
27 - 31 December 2027	Amsterdam	Classroom	**€2,415**
4 - 8 January 2027	Online / Live	Online / Live	**€1,515**
11 - 15 January 2027	Online / Live	Online / Live	**€1,515**
18 - 22 January 2027	Online / Live	Online / Live	**€1,515**
25 - 29 January 2027	Online / Live	Online / Live	**€1,515**



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1 - 5 February 2027	Online / Live	Online / Live	**€1,515**
8 - 12 February 2027	Online / Live	Online / Live	**€1,515**
15 - 19 February 2027	Online / Live	Online / Live	**€1,515**
22 - 26 February 2027	Online / Live	Online / Live	**€1,515**
1 - 5 March 2027	Online / Live	Online / Live	**€1,515**
8 - 12 March 2027	Online / Live	Online / Live	**€1,515**
15 - 19 March 2027	Online / Live	Online / Live	**€1,515**
22 - 26 March 2027	Online / Live	Online / Live	**€1,515**
5 - 9 April 2027	Online / Live	Online / Live	**€1,515**
12 - 16 April 2027	Online / Live	Online / Live	**€1,515**



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19 - 23 April 2027	Online / Live	Online / Live	**€1,515**
26 - 30 April 2027	Online / Live	Online / Live	**€1,515**
3 - 7 May 2027	Online / Live	Online / Live	**€1,515**
10 - 14 May 2027	Online / Live	Online / Live	**€1,515**
17 - 21 May 2027	Online / Live	Online / Live	**€1,515**
24 - 28 May 2027	Online / Live	Online / Live	**€1,515**
7 - 11 June 2027	Online / Live	Online / Live	**€1,515**
14 - 18 June 2027	Online / Live	Online / Live	**€1,515**
21 - 25 June 2027	Online / Live	Online / Live	**€1,515**
5 - 9 July 2027	Online / Live	Online / Live	**€1,515**



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19 - 23 July 2027	Online / Live	Online / Live	**€1,515**
26 - 30 July 2027	Online / Live	Online / Live	**€1,515**
2 - 6 August 2027	Online / Live	Online / Live	**€1,515**
9 - 13 August 2027	Online / Live	Online / Live	**€1,515**
16 - 20 August 2027	Online / Live	Online / Live	**€1,515**
23 - 27 August 2027	Online / Live	Online / Live	**€1,515**
6 - 10 September 2027	Online / Live	Online / Live	**€1,515**
13 - 17 September 2027	Online / Live	Online / Live	**€1,515**
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18 - 22 October 2027	Online / Live	Online / Live	**€1,515**
25 - 29 October 2027	Online / Live	Online / Live	**€1,515**
1 - 5 November 2027	Online / Live	Online / Live	**€1,515**
8 - 12 November 2027	Online / Live	Online / Live	**€1,515**
15 - 19 November 2027	Online / Live	Online / Live	**€1,515**
22 - 26 November 2027	Online / Live	Online / Live	**€1,515**
6 - 10 December 2027	Online / Live	Online / Live	**€1,515**
13 - 17 December 2027	Online / Live	Online / Live	**€1,515**



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27 - 31 December 2027	Online / Live	Online / Live	**€1,515**

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