
SYLLABUS FOR BOARD OF STUDIES ADOPTION — generated from the live catalogue record

Computer Vision Applications

S-06B · 3 days (configurable 1–5 days) · Informatics · AI · Years: 2nd, 3rd, PG

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OVERVIEW

Image processing, object detection and a working vision application on real images.

Computer vision underpins inspection, retail, healthcare and autonomous systems; a working vision application on real images is a compelling portfolio piece.

HOURS AND CREDIT POSITION

Contact hours: 24 Guided project: 6 Self-study: 0 Notional total: 30

Credit claim: 1

30 notional hours ÷ 30 hours per credit (NSQF track, UGC Micro-credentials Guidelines §5.3.3) = 1 credits.

COURSE OUTCOMES

CO1. Apply image-processing operations using OpenCV (K3)

CO2. Detect features and edges in an image (K3)

CO3. Run an object detector and interpret its output (K3)

CO4. Classify images using a convolutional network (K3)

CO5. Build a computer-vision application on real images (K3)

COURSE CONTENT — MODULES

Hours shown are the recommended format; module time scales proportionally when the engagement runs 1–5 days.

Module 1 — Image fundamentals (4h recommended)

Theory: Pixels, colour spaces, image operations

Lab: Manipulate images programmatically

Output: Image-operations notebook

Module 2 — Classical processing (4h recommended)

Theory: Filtering, edges, contours with OpenCV

Lab: Detect edges and contours

Output: Processing notebook

Module 3 — Feature detection (4h recommended)

Theory: Keypoints, matching, transformations

Lab: Match features across images

Output: Feature-matching notebook

Module 4 — Object detection (4h recommended)

Theory: Pre-trained detectors, bounding boxes

Lab: Run a detector and read its output

Output: Detection notebook

Module 5 — Deep vision (4h recommended)

Theory: Classifying images with a convolutional network

Lab: Classify images with a CNN

Output: Classification notebook

Module 6 — Vision capstone (4h recommended)

Theory: A working application on real images

Lab: Ship a vision application

Output: Capstone application

ASSESSMENT SCHEME (100 MARKS)

Continuous lab exercises — 40 marks

Capstone project & demonstration — 40 marks

Quiz & viva voce — 20 marks

CO-PO MAPPING

CO1 !' PO5 (strength 2)

OpenCV is a modern tool of the field.

CO2 !' PO3 (strength 2)

Feature and edge detection is developed solution logic.

CO3 !' PO5 (strength 2)

Running detectors is modern-tool usage.

CO4 !' PO3 (strength 2)

Image classification is solution development.

CO5 !' PO3 (strength 2)

The application is a developed solution.

EVERY PARTICIPANT RECEIVES

- Certificate of completion
- Course material
- LMS access
- Interview question bank
- Mock interview & viva practice
- Optional nasscom NSQF assessment (priced per candidate on your quotation)

FEE

12,000 per student, incl. GST

Excludes the optional nasscom assessment where offered. Final pricing on your college's quotation.

DESIGNED BY

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