NiT

Beyond Curriculum Training
On
" Machine Vision"

Date: 01/02/2021 to 12/02/2021

Organized by

Narula Institute of Technology

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Training Overview

This course offers the process of generating a symbolic description of the environment from an image. It covers the physics of image formation, image analysis, binary image processing, and filtering.

Training Objective

Objective of the course is to make an acquaintance of advantageous features of Machine vision that can be applied in robotics and in the intelligent interaction of machines with their environment.

Course Content

Deriving a symbolic description of the environment from an image.
Understanding physics of image formation.
Image analysis as an inversion problem.
Image analysis as an inversion problem.
Recovering shape, lightness, orientation, and motion.
Using constraints to reduce the ambiguity.
Photometric stereo and extended Gaussian sphere.
Applications to robotics; intelligent interaction of machines with their environment.

Course Outcomes

After completion of this course students will be able to
1. Solve the problem related to "time-to-contact" and focus of expansion in a machine vision problem.
2. Obtain vehicle trajectories through tracking vehicle headlight.
3. Find line and vanishing points for rectification of head-mounted camera video.

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