

ROBOTICS AND COMPUTER VISION

Basic components of robotics system, Kinematics and manipulators, selection of Co-ordinate frames, Homogeneous transformation, solution of kinematics equations, Lagrangian equations and manipulator dynamics, Control design, Languages for Robots and Applications.

3D-vision, Perspective vision, CCD camera study, real time processing, Segmentation using Genetic Algorithm: Adaptive algorithm for indoor scene, and outdoor scene. Interpretation of pictures, shape recognition, dynamics scene analysis. Introduction to AGV, clustering and non supervised learning method.

BOOKS:

1. "Digital Image Processing And Computer Vision"-R.Schalkoff, Wiley.
2. "Computer Vision"-D.H.Ballard and C.M.Brown, Prentice Hall.
3. "Introduction to Robotics"-Craig, J.J, Addison Wesley.
4. "Robot Vision"-Horn B., MIT Press.
5. "Robotics"-Lee, Mc Graw Hill.