



“This is Computer age next will be Robotic era”

WORKSHOP ON X-eyeBOT “MACHINE VISION ROBOTICS”

ThinkWare conceptualizes their own unique modules in Robotics. In this course we provide hands on work on Image Processing using MATLAB software & its applications in Robotics

ThinkWare: Technology & Innovation Kiosk

Shepherding-Intelligent-Tomorrow

ThinkWare is a venture which deals in the domain of Robotics, Embedded Systems & MATLAB with strategically current focus in educational domain to bridge the gap between Industry demands & current academics offerings in Institutes. With a passion in Robotics and keeping constant eye on various national & international events, we have vast experience in the same and a constant focus in this grooming industry. **ThinkWare** was founded by a strong team of young Engineers & budding Entrepreneurs working in the same industry, and is currently incubated at STEP-ITBI, JSSATE Noida. The company is properly backed by the experienced academicians and Industries.

X-eyeBOT Course Details

"INDIA'S BEST COURSE ON EYE ROBOTICS BASED ON MATLAB"

X-eyeBOT course presents the theory and practice of digital image processing with Matlab. Numerous examples and practical hands-on exercises are included in the course. One major topic of image processing is covered in every lecture, typically consists of a discussion of the basic theoretical concepts and some examples illustrating practical imaging problems. Lectures will provide a practical learning experience.

Features of Workshop:

- Certificate of participation will be given to each participant.
- Free 30 days 8051 e-learning course on Thinkware.com worth Rs. 1500/-
- Free access to INDIA's best Robotics forum "RoBoFreaks" at Thinkware where student's can publish their projects & will be acknowledged.
- Study material & Thinkware CD will be given to each student.
- Lifetime membership account on www.thinkware.com to avail all discounts in future.

Machine vision robotics

- **Introduction to Computer vision:** [2 hours]
 1. Discussion on vision sensors
 2. Cameras available.
 3. Application of vision in robotics and mechatronic systems.
- **Digital Image Processing in Matlab:** [4 hours]
 1. Basics of Matlab
 2. Image Acquisition
 3. Image Processing toolboxes.
 4. Creating , Resizing Images
 5. Multi frame images to movie and vice versa
 6. Spatial transformation
 7. Sample program needs to be discussed
 8. Data Structured based Image Processing
 9. Image types in MATLAB
 10. Conversion of images from one format to another
 11. Image arithmetic
 12. Measuring image properties as pixel value, distance etc.
- **Image Acquisition and Processing** [2 hours]
 1. Data structure of image acquired.
 2. Pixels, color spaces, vector indexing and matrix indexing.

- **Image Manipulation in MATLAB** [4 hours]
 1. Adjusting image intensity.
 2. Image histogram equalization, using arithmetic functions to enhance images.
 3. Thresholding, Edge Detection, Template matching, distinguishing colors, Shape Detection.
 4. Frequency domain filtering and convolution.

- Parallel Port Programming & Machine Control. [1 hours]

- Robots that will be covered on this day include [3 hours]
 1. Ball Following Robot
 2. Line Following Robot
 3. Object tracking Robot

Ideas can be discussed with the students in the workshop.

How is this workshop beneficial for students

1. MATLAB is one of the most upcoming field for engineers.
2. Learn to work in a team.
3. Robotics is one of the popular events in all Technical festivals, so students can participate over there.
4. Certificate of participation for students.
5. Further students can organize an event in their college too.
6. Students can get an exposure & know how from other college students through this workshop.

Workshop training will be provided by best people already working in the field of Robotics.

Course Duration:

- The workshop will be of 2 days (16 hours)

Course Fees:

- The fee for the workshop is Rs. 1500/- each student (with takeaway kit).

The workshop will be conducted at Thinnkware Venue only 1 batch every month.

Contact Person:

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