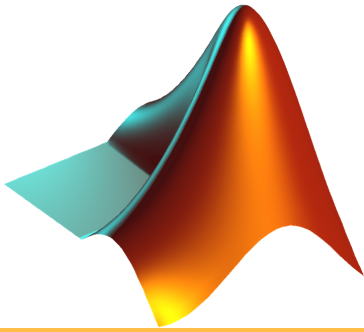




MATLAB

MATLAB (matrix laboratory) is a multi-paradigm numerical computing environment and proprietary programming language developed by MathWorks. MATLAB allows matrix manipulations, plotting of functions and data, implementation of algorithms, the creation of user interfaces, and interfacing with programs written in other languages.

KEY FEATURES

Effective Upskilling Planned Curriculum
Team Learning Awesome Quizzes
Complete Hands on

The below Curriculum is Schedule for 2 weeks

CURRICULUM

INTRODUCTION TO MATLAB

GRAPHICAL USER INTERFACE (GUI)

DIGITAL IMAGE PROCESSING WITH MATLAB

What Is an Image?
What Is a Digital Image?
What Is Digital Image Processing
Components in Digital Image Processing
Important Steps in a Typical Image Processing System
Reading a Graphics Image
Writing a Graphics Image
Image Types
Data Classes
Converting Between Image Types

ANALYZING AND ENHANCING IMAGES

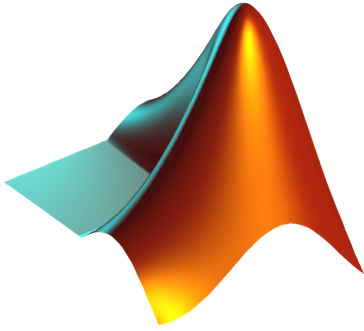
Analyzing an Image
Spatial Transformation and Image Registration
Image Analysis and Statistics
Image Arithmetic
Image Enhancement and Restoration
Linear Filtering and Transforms
Morphological Operations
ROI-Based, Neighborhood, And Block Processing
Color map and Color Space Functions
Image segmentation
Basic commands on image processing

WAVELETS

Wavelet transforms

ADVANCED COMMUNICATION SYSTEMS

Code Division Multiple Access (CDMA)
Orthogonal Frequency Division Multiplexing (OFDM)



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LAB SESSION MODULES

- PROGRAM 1: READING AND WRITING IMAGES
- PROGRAM 2: ANALYZING IMAGES
- PROGRAM 3: PROCESSING IMAGE SEQUENCES
- PROGRAM 4: HDR IMAGES
- PROGRAM 5: FFT & IFFT OF IMAGES
- PROGRAM 6: DISCRETE COSINE TRANSFORM
- PROGRAM 7: RADON TRANSFORM OF SINGLE SQUARE OBJECT
- PROGRAM 8: DETECTING LINES USING RADON TRANSFORM
- PROGRAM 9: INVERSE RADON TRANSFORM
- PROGRAM 10: DILATION PROCESS
- PROGRAM 11: EROSION PROCESS
- PROGRAM 12: MORPHOLOGICAL OPENING PROCESS
- PROGRAM 13: MORPHOLOGICAL CLOSING PROCESS
- PROGRAM 14: SKELETONIZATION AND PERIMETER DETERMINATION
- PROGRAM 15: DISTANCE TRANSFORM
- PROGRAM 16: GETTING IMAGE PIXEL VALUES
- PROGRAM 17: CONTOUR PLOT
- PROGRAM 18: CREATING HISTOGRAM
- PROGRAM 19: DETECTING EDGES
- PROGRAM 20: DETECTING CORNERS
- PROGRAM 21: TRACING OBJECT BOUNDARIES IN AN IMAGE
- PROGRAM 22: DETECTING LINES USING HOUGH TRANSFORM
- PROGRAM 23: ANALYZING HOMOGENEITY
- PROGRAM 24: UNDERSTANDING INTENSITY ADJUSTMENT & ADJUSTING INTENSITY VALUES TO SPECIFIED RANGE
- PROGRAM 25: ADJUSTING INTENSITY VALUES USING HISTOGRAM EQUALIZATION
- PROGRAM 26: CONTRAST LIMITED ADAPTIVE HISTOGRAM EQUALIZATION (CLAHE)
- PROGRAM 27: DECORRELATION STRETCH
- PROGRAM 28: REMOVING NOISE FROM DIGITAL IMAGES
- PROGRAM 29: REMOVING NOISE USING ADAPTIVE FILTERING
- PROGRAM 30: CREATE A BINARY MASK
- PROGRAM 31: FILTERING A REGION IN AN IMAGE
- PROGRAM 32: SPECIFYNG THE FILTERING OPERATION
- PROGRAM 33: FILLING AN ROI
- PROGRAM 34: UNDERSTANDING DEBLURRING
- PROGRAM 35: DEBLURRING WITH WIENER FILTER
- PROGRAM 36: DEBLURRING WITH REGULARIZED FILTER
- PROGRAM 37: DEBLURRING WITH LUCY RICHARDSON FILTER
- PROGRAM 38: DEBLURRING WITH BLIND DECONVOLUTION ALGORITHM