FACULTY DEVELOPMENT PROGRAM
on
Imaging Application through MATLAB

Organised by

Electronics & ICT Academy IIT Roorkee

EC&T
IIT Roorkee

Oct 09, 2018 - Oct 13, 2018

Experts from Academia/Industry
Dr. Balasubramanian Raman
(IIT Roorkee)
Dr. Partha Pratim Roy
(IIT Roorkee)

Supported by

Ministry of Electronics & Information Technology
Government of India

Venue

Indian Institute of Technology Roorkee
Uttarakhand 247667 INDIA

Why Imaging Application through MATLAB ?

Importance and necessity of Imaging Application stem from two principal application areas: the first being the improvement of pictorial information for human interpretation and the second being the processing of a scene data for an autonomous machine perception. The human visual system does not perceive the world in the same manner as digital detectors, with display devices imposing additional noise and bandwidth restrictions. Salient differences between the human and digital detectors will be shown, along with some basic processing steps for achieving translation. Image processing must be approached in a manner consistent with the scientific method so that others may reproduce, and validate one's results.

Objective of the Course

- Introduction of basics of Image Processing through MATLAB i.e simple problems in perspective transformations, edge detection, image enhancement, image filtering, image segmentation, feature tracking and wavelet analysis.
- To familiarize the participants with basic learning algorithms, techniques & their applications, as well as general questions.
- Several software libraries in MATLAB and datasets publicly available will be used to illustrate the application of these algorithms.
- The emphasis will be thus given on Imaging Applications.
- Training with the recent developments in Digital Image Processing.

Program Features

- The program is split into lectures and lab sessions.
- Quizzes and project work for enhanced learning.
- Hands-on experience on basic & advanced-level topics.
- Interaction & learning with experts from academia & industry.
- Certificates to the participants by EICT Academy, IITR.

Focus Area

- Introduction to computer vision.
- Digital images– the eye, brightness, image sampling, neighbors of pixels, distance.
- Multiview geometry– stereo vision, the correspondence problem, algorithms for stereo matching.
- Image segmentation – edge detection, hough transform, thresholding, spatial and frequency methods.
- Frequency domain image enhancements – 1D FT, inverse, 2D FT, filtering, lowpass, highpass, unsharp, high-boost, use of FT, fast FT.
- Applications of wavelets in image processing.
- Color image processing.
- Morphological image processing.
- Practicals using MATLAB.

Benefits and Outcomes of the Course

- Participants will understand the difficulties that the vision problem involves and various edge detectors.
- Participants will able to implement several image filtering algorithms and design a simple vision system.
- Understand the different ways that the shape of an object can be recovered.
- Hands-on experience in working with different software will be provided in Digital Image Processing.
- Interaction with Academicians will be established with possible collaborations.

Coordinators
- Dr. Balasubramanian Raman, IIT Roorkee
- Dr. Partha Pratim Roy, IIT Roorkee
- Dr. Sanjeev Manhas, PI, EICT, IIT Roorkee

Who Can Attend ?

Program is open to faculty members/research scholars/PG students from colleges/universities, and industry personnel working in the concerned/allied discipline.

Registration Fee

Faculty members/Research scholars: ₹ 2,500/-
Industry person: ₹ 3,000/-

Payment Details

DD in favor of "Dean SRIC IIT Roorkee" payable at Roorkee
"OR"
Make Online Payment by NEFT/RTGS on given detail
Account Name: Research Project, IIT Roorkee
Account Number: 33012172097
IFSC code: SBIN0001069

How to Apply

Step 1: Make Payment
Step 2: Participants may fill registration form through Academy website (http://eict.iitr.ac.in).
OR
Step 2: Send a duly filled-in registration form along with Demand Draft to Academy address.
Mr. Prateek Sharma, EICT Academy, ECE Department, IIT Roorkee–247667

Important Dates ⊙

Last Date For Registration :
01-Oct-2018

EICT Academy IITR

Electronics and ICT Academy (E&ICT) at IIT Roorkee (funded by Ministry of Electronics and Information Technology) aims to enrich and upgrade teaching and research competences of engineering faculties of institutes/colleges by conducting courses and workshops in fundaments as well as emerging areas of E&ICT and enabled areas. The programs are conducted by well-known industry partners, resource persons from leading academia and experts from renowned R&D organizations.

Activities of the Academy

- Specialized training on basic and advanced level topics with hands-on experience in the emerging areas of Electronics & ICT.
- Setup the activity centers to conduct FDPs locally at institutes/colleges.
- Curriculum development for the industry.
- Continuing Education Programme for students/working professionals.
- Design, develop and delivery of specialized modules for specific research areas in industry.

REGISTRATION FORM

Applicant Name _____
Gender:_____
Category (GEN/OBC/SC/ST): _____
Designation: _____
Name and Address of the Organizatio/Institute: _____
_____
_____
City/Town: _____
Email: _____
Phone Number: _____
Do you need Accommodation? (Yes/No):_____
DD Number:_____
Date: _____
Issuing Bank:_____
Payable at:_____

Signature of the Applicant

Contact Us

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