





**Electronics & ICT Academy
IIT Roorkee**

FACULTY DEVELOPMENT PROGRAM
on
**"Pattern Recognition and
Image Analysis"**



In Association with
Department of Computer Sc & IT,
Bhaderwah Campus,
University of Jammu



May 25, 2018 - May 29, 2018

Experts from Academia
Dr. Sanjeev Kumar
IIT Roorkee

Supported by
Ministry of Electronics & Information Technology
Government of India.

Venue
Lal-Ded Auditorium
Department of Computer Sc & IT,
Bhaderwah Campus,
University of Jammu

**Why Pattern Recognition and
Image Analysis?**

Pattern recognition and image analysis have become inevitable for the growth and development of new and emerging scenarios of Computer Engineering Sciences. It is so pervasive today that you probably use it dozens of times a day without knowing it. Its techniques are becoming indispensable and it holds great potential in the field of computer vision, image processing, medical imaging, natural language processing, speech processing etc. This course will help you to learn about the most effective techniques and gain practice implementing them and getting them to work for yourself. More importantly, you'll learn about not only the theoretical underpinnings of learning but also gain the practical know-how needed to quickly and powerfully apply these techniques to new problems. You would also acquire the skills needed to work with the problems of kernel-based learning, ensemble learning, supervised learning algorithms and fuzzy logic concepts.

Objective of the Course

- Introduction of Pattern Recognition.
- Understanding of various state-of-art techniques in image/signal analysis.
- Knowledge and hands-on training of various software for pattern recognition and image analysis.
- Introduce real-life applications of the pattern recognition and image analysis.


Program Features

- The program is split into lectures and labs/hands-on sessions.
- Hands-on experience on basic and advanced-level topics.
- Interaction & learning with experts from academia & industry.
- Certificates to participants by E&ICT Academy IIT Roorkee.

Focus Areas

- Introduction to Pattern Recognition.
- Image Analysis and Pattern Recognition.
- Kernel based learning, ensemble learning.
- Adaptive Linear NN, Multiple Adaptive NN, Back Propagation NN.
- Introduction to Genetic Algorithms.
- Dimension Reduction Algorithms.
- Linear Classifiers and Deep Learning.
- Fuzzy Logic Concepts, Fuzzy Membership, with Fuzzy operations.
- Hands-on session on Supervised Learning Algorithms, Image Processing and PR.
- Hands-on session on Neural Networks and Fuzzy using C/Python.

Pattern Recognition



Benefits and Outcomes of the Course

- Learning of basic knowledge in the area of pattern recognition and image analysis.
- Hands-on experience in working with different software in image analysis.
- Understanding of using pattern recognition techniques for digital, medical and satellite imaging.

Coordinators from IIT Roorkee

- Dr. Sanjeev Manhas, FI, E&ICT Academy, IIT Roorkee
- Dr. Sanjeev Kumar, Dept. of Mathematics, IIT Roorkee

Coordinators from University of Jammu

- Prof. GN Bhat, Rector Bhaderwah Campus, University of Jammu
- Dr. Jitinder Manhas, CS & IT Dept. University of Jammu
- Dr. Abid Barwar, CS & IT Dept. University of Jammu

Who Can Attend ?

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

Registration Fee

Faculty members: ₹ 2,500/-
Research scholars: ₹ 2,500/-
Persons from Industry: ₹ 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: SBIN001069

How to Apply

Step 1: Participants may fill the registration form available on the link "Apply Here" for the relevant course on eict.iitr.ac.in
Step 2: Make Payment
OR
Step 3: 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 Online Registration: 21st May 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 fundamentals as well as emerging areas of E&ICT and related 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.

Faculty Development Program
on
**Pattern Recognition and Image
Analysis**
May 25 - May 29, 2018
REGISTRATION FORM






Applicant Name: _____
Gender: _____
Category (GEN/OBC/SC/ST): _____
Designation: _____
Name and Address of the Organization/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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Time\Day	Day-1	Day-2	Day-3	Day-4	Day-5
9:00-9:30	Registration and Inauguration				
9:30-11:00	Introduction to Pattern Recognition	Image Analysis and Pattern Recognition	Kernel-based learning, ensemble learning	Adaptive Linear NN, Multiple Adaptive NN, Back Propagation NN	Introduction to Genetic Algorithms
11:00-11:15					
11:15-12:45	Dimension Reduction Algorithms	Linear Classifiers	Deep learning	Fuzzy Logic: Fuzzy Logic Concepts, Fuzzy Membership, with Fuzzy operations	Classification Algorithms: Naïve Bayesian, Decision Tree, random forests
12:45-14:15	LUNCH				
14:30-16:30	Lab session on Weka/Matlab	Lab session on Image Processing and PR	Lab session on supervised learning algorithms	Lab session on Neural Networks and Fuzzy Using C/Python	Hands on with real data sets (GA & MOGA)