

## Faculty Information



**Prof. Massimo Tistarelli** is currently a full professor of computer science at the University of Sassari, Italy. He is also the director of the Computer Vision Laboratory at the University of Sassari, Italy. Main research interests of Prof. Massimo Tistarelli cover biological and artificial vision, biometrics, robotic navigation and visuo-motor coordination. He is an author of more

than 100 scientific papers in reputed conferences and international journals. Prof. Tistarelli is the principal editor for the Springer book “Handbook of Remote Biometrics”, published in June 2009. In 1991 he was awarded the best paper award from IEEE Computer Society. Since 2000 he has been the chairman for several International workshops on biometrics. Prof. Massimo Tistarelli was the chairman of the 5th IEEE AutoId conference, track chair for biometrics at the 19th ICPR, Area chair for CVPR 2010 and general chair of the IEEE/IAPR 3rd Int'l Conference on Biometrics held in June 2009. He is an associate editor for many reputed journals such as IEEE Transactions on Pattern Analysis and Machine Intelligence, Image and Vision Computing, IAPR Pattern Recognition, IAPR Pattern Recognition Letters and IET Biometrics. Since 2003 he is the director for the Int'l Summer School on Biometrics (now at the 14th edition). He is the vice-chair of the steering committee for the newly established IAPR Technical Committee 4 on Biometrics, Fellow member of IAPR and senior member of IEEE.



**Dr. Surya Prakash** is currently an Assistant Professor in Discipline of Computer Science and Engineering at Indian Institute of Technology Indore, India. He received his MS and PhD degrees in computer science and engineering from Indian Institute of Technology Madras, India and Indian Institute of Technology Kanpur, India respectively. His research

interest includes image processing, computer vision, pattern recognition, biometrics, and identity and infrastructure management. He has published several research articles in peer-reviewed international journals and conferences. He has also co-authored two books titled “IT Infrastructure and Its Management” published by Tata McGraw-Hill, India and “Ear Biometrics in 2D and 3D: Localization and Recognition” published by Springer. He has also been in the program committees of several international conferences in the field of pattern recognition, image processing and intelligent computing. For more information please visit:

<http://iiti.ac.in/people/~surya/>

## Topics to be Covered

- 1. Introduction to Biometrics:** overview of biometrics, common biometric traits, basic biometric system errors, discussion on how to select a biometrics Human vision and image understanding: early neural processing of image structure in the retina, high-level visual attention, representations of image information, extraction of 3D scene information from 2D images, discussion on some exciting evolving application areas of computer vision.
- 2. Digital acquisition and processing of Biometric data:** image acquisition techniques, 2D and 3D image acquisition, visible and thermal infrared imagery, pre-processing techniques for biometric data Feature extraction and classification: significance of image features, feature selection, feature learning, binary classification, multi-class classification
- 3. Error rates and normalization:** verification and identification performance, computation of various error rates such as FAR, FRR and EER for biometric systems, ROC curve, CMC curve, techniques for feature normalization Fingerprint analysis and recognition: fingerprint sensing, fingerprint representation, matching, fingerprint classification and indexing.
- 4. Face analysis and recognition, Iris analysis and recognition:** data acquisition for face and iris recognition, face and iris recognition techniques, local and global models of feature extraction and matching for face and iris

## Who Should Attend the Course ?

- Research scholars, graduate students, researchers from different organization across the country working in the area of pattern recognition and biometrics.
- Young researchers working in R & D laboratories related to pattern recognition and biometrics. Faculty members and academicians interested in the field of pattern recognition and biometrics.
- Student of all levels (BTech/MSc/MTech/PhD) from academic institutions and technical institutions.

## Course Co-ordinator

**Dr. Surya Prakash**

Assistant Professor,  
Research Group on Biometrics, Pattern Recog. & Computer Vision,  
Discipline of Computer Science & Engineering,  
Indian Institute of Technology Indore, Indore-453552, India.  
E-mail: [surya@iiti.ac.in](mailto:surya@iiti.ac.in), [spagnihotri@gmail.com](mailto:spagnihotri@gmail.com)  
For any further information and registration, please visit :  
<http://cse.iiti.ac.in/GIAN/APRT/index.html>

# GLOBAL INITIATIVE ON ACADEMIC NETWORK

**GIAN**

**5 Days Course**

*On*

**Advanced Pattern Recognition  
Techniques for Biometrics**

**March 5–9, 2018**

**Under the aegis of  
MINISTRY OF HUMAN  
RESOURCE DEVELOPMENT**



*Organized By*

**Discipline of Computer Science & Engineering  
Indian Institute of Technology Indore  
Indore -453552**

## Overview

The main motivation behind the use of biometrics is to provide a convenient mechanism for person authentication with the help of biological or behavioral characteristics and to eliminate the use of much inconvenient ways of authentication such as the one which are based on ID card, password, physical keys, PINs etc.

Biometric recognition uses techniques from Pattern Recognition for performing various tasks such as data preprocessing, feature extraction, feature selection, pattern classification, clustering, and so on. Methods and applications of pattern recognition in biometrics have seen tremendous advances in recent years.

This course on Advanced Pattern Recognition Techniques for Biometrics will provide an excellent opportunity to students, researchers and practitioners to learn advanced pattern recognition techniques for biometric recognition.

## Objectives of the course

Main objectives of the proposed course are listed below.

- It will provide participants an opportunity to learn basic as well as advance topics of pattern recognition used in biometrics.
- The course will deal with both theoretical and practical aspects of pattern recognition techniques for biometrics.
- It will cover various techniques/algorithms used for feature extraction and matching in biometric recognition.

## Schedule of The Course

Date : March 5–9, 2018

Total Number of days/lectures : 5 days /8 lectures & tutorials

## Registration Fee

| Registration                                     | Early Registration (on or before January 15, 2018) | Late Registration (on or before February 10, 2018) | After February 10, 2018 or onsite |
|--|--|--|-----------------------------------|
| Participant from outside India                   | USD 300  | USD 400  | USD 450                           |
| Participant from Industry/ Business organization | Rs. 15,000   | Rs. 18,000   | Rs. 20,000                        |
| Participant from Academic Institution            | Rs. 3,500  | Rs. 4,500  | Rs. 5,000                         |

The fee includes all instructional materials, computer use for tutorials, and lunch. The participants will be provided with single bedded accommodation on payment basis.

## How to Apply

**Step 1: Payment of Registration Fee:** Payment for the registration fee can be made through online/offline mode. Online payment can be made through **NEFT transfer** and offline payment can be made through **Demand Draft**. Details regarding payment are as follows:

**I. By Demand Draft:** Demand Draft should be drawn in favor of “**Registrar, IIT Indore**”, payable at Indore.

**II. By NEFT Transfer:** Registration fee can be paid through NEFT. Transfer of the amount can be done to the account number given below:

Name of the Beneficiary : Registrar, Indian Institute of Technology Indore

Name of Bank : Canara Bank

Branch Code : IIT Indore, Simrol Campus Branch

Beneficiary Account No. : 1476101027440

Bank MICR Code : 452015003

Bank IFS Code : CNRB0006223

**Step 2: Registration:** After completing the payment of registration fee, fill the application form available <http://gian.iiti.ac.in/register.php> to complete the registration.

If payment is made through Demand Draft, send your Demand Draft to the following address (also e-mail the scanned copy of the Demand Draft to [surya@iiti.ac.in](mailto:surya@iiti.ac.in)):

### Dr. Surya Prakash

Assistant Professor

Research Group on Biometrics, Pattern Recog. & Computer Vision Discipline of Computer Science and Engineering

Indian Institute of Technology Indore

Simrol Campus, Khandwa Road,

Indore – 453552, India.

Registration can be also done offline by filling the form printed in this brochure and sending it along with Demand Draft (print of the online payment receipt if payment is made online) to above mentioned address

## Credits

**The course carries 1 credit. All the participants will be provided a certificate after completion of the course.**



A Five Days Course  
On

# Advanced Pattern Recognition Techniques for Biometrics

## Registration Form

March 5 - 9, 2018

### Personal Details:

Name of the Applicant : .....

Designation: .....

Affiliation: .....

Address for Correspondence:.....

Phone:.....

E-mail:.....

### Details of Bank Draft:

Draft number: .....

Bank Name: .....

Branch Name:.....

Amount Rs. ....Dated ...../...../2018

### Accommodation Required:

YES :  No:

Note: **Accommodation can be arranged on payment basis.**

( Signature of Candidate)

Note: A photocopy of this form can also be used for the registration .