A One Week National Level

Faculty Development Programme (FDP)

On

New trends in Image & Video Processing Approaches for forensic/surveillance Applications

29th April – 3rd May 2019

Organized by

Department of Computer Science & Engineering

Anurag Group of Institutions

(Autonomous)

In Association with

University of Malaya, Malaysia

FDP Coordinators
Dr. Pavan Kumar C ,
Assoc. Prof. , Dept. of CSE
Mrs. P Sriatha
Assoc. Prof., Dept of CSE

FDP Convenor
Dr. G Vishnu Murthy,
Dy. Director & Head,
Dept. of CSE

Report on
Faculty Development Programme
On
New Trends in Image & Video Processing Approaches for forensic/surveillance Applications

About FDP:

In current research, the surveillance, monitoring and forensic investigation are the emerging applications that draw special attention of the researchers. This is due to increase in crimes, such as forged documents, fake currency notes, robbery, hate crimes etc. In order to prevent such crimes, a large number of CCTV cameras are installed at various places, especially at sensitive places. As a result, one can expect several challenges and poses for identifying the crimes through video and images understanding. However, understanding video or image content with image features is hard and not reliable due to adverse factors, such as low contrast, non-uniform illumination effect, clutter background and occlusion. To overcome these problems, text detection and recognition are introduced because the meaning given by the text recognition methods matches with the content in the video or images. Sometimes, especially for forensic applications, cues given by images may not be sufficient to take a decision due to loss of visibility, limitations of devices, evading evidences etc. In this situation, handwriting analysis play a vital role in identifying cues. Similarly, the same actions are required for monitoring videos or images posted on social media. Therefore, it is required to person behaviour/attitude through images posted by them on social media.

This workshop covers techniques for text detection and recognition in video and images. A few techniques based on handwriting analysis for forensic applications, such as fraud document identification, gender identification and nationality identification will be discussed and demonstrated. The methods for person behaviour oriented social media image classification include classification of extraversion, bullying, threatening, depression, psychopath images etc. Finally, the workshop covers tips for writing tier-1 articles in image processing and pattern recognition that includes how to identify the research problem, how to generate ideas and how to address reviewer comments.

FDP Topics

- Introduction to Fundamentals of Video Processing and How to extract Features from Video
- Methods for exploring temporal, motion information for text type classification and tracking.
- Text Detection and Recognition in Video and Images
- Ring Radius Transform based Methods for Text Detection and Recognition
- Handwriting Analysis for Forensic Application
- Methods for Document age estimation, Gender Identification and Nationality Identification
- Person Behaviour Oriented Social Media Images Classification
- Methods for Classification of normal and abnormal images posted on social media.
- Tips for Writing Tier – 1 Journal Articles
  How to identify the research problem
  How to generate ideas for solving the problems
  How to write tier-1 journal articles
  How to address the reviewer comments.
  Discussion on Future Challenges in the field of image processing and document image analysis.

FDP Brochure

Registration Form

New Trends in Image and Video Processing Approaches for Forensic / Surveillance Applications

April 29th to May 3rd, 2019

Name:

Designation:

Organization:

Mailing Address:

Mobile:

Email:

Registration Fee Details

DD No.

Amount: Date:

Bank Name:

Place

Date   Signature

I recommend the registration of the above person for attending the five day workshop on "New Trends in Image and Video Processing Approaches for Forensic and Surveillance Applications"

Signature with Seal
Head of forwarding institute

Chief Patron
Dr P Rajeshwar Reddy, Chairman, AGI

Patrons
Mrs. S Neelima, Correspondent & Secretary, AGI
Dr. K S Rao, Director, AGI
Dr. G Vishnu Murthy, Dy. Director, AGI
Dr. V Vijaya Kumar, Dean CSE & IT, AGI

Co-Ordinator
Dr. Pavan Kumar C, Assoc. Professor, CSE
Mrs. P Srilatha. Assoc. Professor, CSE

Organising Committee
Dr. Sandeep Singh Rawat, Professor CSE
Mrs. Sridevi M, Assoc Prof, CSE
Mrs. Swapna Goud, Asst Prof, CSE
Mrs. V Jyothi, Asst Prof, CSE
Mrs. B Jyothi, Asst Prof, CSE
Mr. Ramakrishna V, Asst Prof, CSE
Mr. P Raja Sekhar Reddy, Asst Prof, CSE
Mr. Ravinder Reddy, Asst Prof, CSE
Mr. Kiran Kumar, Asst Prof, CSE
Mrs. Durga Bhavani, Asst Prof, CSE
Mr. Amarnadh V, Asst Prof, CSE

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ANURAG GROUP OF INSTITUTIONS
An Autonomous Institution

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About the Institution

Anurag Group of Institutions (AGI) is Telangana's top-ranked Autonomous institution providing best-in class education in Engineering, Pharmacy and Business Management over the past decade and a half. AGI is recognized by the All India Council for Technical Education (AICTE), University Grants Commission (UGC), National Board Accreditation (NBA), National Assessment and Accreditation Council (NAAC) and Pharmacy Council of India (PCI). AGI is accredited by Tata Consultancy Services (TCS) and it is the first institute in Southern Indian state to sign MoU with "The Open Group" to promote high level academic research standards. AGI has received "Distinguished College Award" by "CSI Technxt", "The Top Performing College Award" for the year 2013 and 2015 by IBM", "The Best Engineering College Award" by ISTE and has ranked 8th among the Engineering colleges in the State of Telangana by the Week magazine. Most recently, AGI is recognized as a Research Center in the Computer Science & Engineering, MBA and Pharmacy departments by JNTUH.

About the Department

The Department of Computer Science and Engineering was established in the year 2002 with a vision of nurturing technically competent and socially responsible engineering professionals. The department offers undergraduate and postgraduate programs with an annual intake of 240 and 72 students respectively with qualified faculty. CSE department has MoUs with Microsoft, Infosys, IBM, Oracle Academy, Microsoft Dynamic Alliance partner, Technology Business Incubator, Red Hat and CISCO. The department has active student chapters of professional bodies such as IEEE, ACM, CSI and ISTE.

About Faculty Development Programme (FDP)

In current research, the surveillance, monitoring and forensic investigation are the emerging applications that draw special attention of researchers in Image and Video Processing. This workshop is intended to provide theoretical as well as hands on experience (with MATLAB) in the basics and advanced level topics of image and video processing.

Contents of FDP

Day-1: Fundamentals of Video Processing and How to extract Features from Video
Day-2: Text Detection and Recognition in Video and Images
Day-3: Handwriting Analysis for Forensic Application
Day-4: Person Behavior Oriented Social Media Images Classification
Day-5: Tips for Writing Tier – 1 Journal Articles

About Resource Person

Dr Shivakumara P is presently working in Department of Computer System & Technology, University of Malaya, Malaysia. Dr Shivakumara has worked as Research Fellow at the National University of Singapore and Nanyang Technological University, Singapore. He is an international expert in the area of Video Text Detection and Recognition and Fraud Handwritten Text Analysis and has publications in international journals and conferences of repute. He has international research collaboration projects with various leading Universities of the World.

Who can attend the workshop

This FDP is open to Faculty members, research scholars, and PG students from colleges and Universities. It is also open for industry personnel working in similar disciplines.

Registration Fees#

Category of Participants	Early Bird Registration	Late Registration
Faculty of Educational Institutions	₹ 2,000/-	₹ 3,000/-
Research Scholars and PG Students	₹ 1,500/-	₹ 2,500/-
Industry Participants	₹ 3,000/-	₹ 5,000/-

Registration fees include certification of participation, registration kit, working lunch and snacks on the days of workshop. Accommodation will be provided on payment basis on prior request. Participants can avail bus facility.

How to Apply:

Participants need to register by paying registration fees by using any of the following registration methods:

1. Send the registration form along with Demand Draft drawn in favor of "Anurag Group of Institutions, Hyderabad" payable at Hyderabad to the correspondence/ Email address.

or

2. Through registration link on FDP website: www.agicse-events.com

Important Dates:

Early bird Registration: 31st March 2019
Late Registration: 15th April 2019
Confirmation of registration: 20th April 2019

On spot registration will not be entertained as the number of participants is limited to 30.

About Resource Person

Dr Shivakumara P received B.Sc., M.Sc., M.Sc Technology by research and Ph.D. degrees from the University of Mysore, Mysore, Karnataka, India in 1995, 1999, 2001 and 2005, all in computer science. Currently, he is working as a Senior Lecturer at University of Malaya (UM), Kuala Lumpur, Malaysia. He worked as a Research Fellow at the National University of Singapore, Singapore from 2005-2007 and 2008-2013. Besides, he worked as Research Consultant at Nanyang Technological University, Singapore for the period of one year from 2007-2008. Based on his work, he has published more than 190 research papers in national, international conferences and journals. He has been serving as Associate Editor for Transactions on Asian Language Information Processing (TALLIP). Further, he was the recipient of a prestigious "Dynamic Indian of the Millennium" award by KG foundation, India for his contributions to computer science field. He won "Top Reviewer" award from Pattern Recognition Letters. He has several international collaborators, namely, Nanjing University, China, Hohai University, China, Shantou University, China, Indian Statistical Institute, Kolkata, India,

University of Essex, UK, Assiut University, Egypt, University of Technology Sydney, Australia. He has been serving as chairs at different levels for International Conference, namely, ICDAR, DAS, ICFHR, ACPR etc. His area of research includes video text understanding, document analysis, image processing and OCR related.

Participants List

S.No	Name of the Participant	Univeristy / College Name
1	Raghavendra Goud	HCU,Hyderabad
2	Yara Srinivas	HCU,Hyderabad
3	Nanda Gopal	CMR,Hyderabad
4	Santhosh Patil	VIT, Vellore
5	Arvind	VIT, Vellore
6	Usha Rani	CVR,Hyderabad
7	NagaRaju .K	Giet, Rajamundry
8	Anupama	BVRIT,Hyderabad
9	Chari Gnaneswara	BVRIT,Hyderabad
10	Dr. Sasi Kiran J	Farah Institute of Technology
11	Ravinder Naik	AGI,Hyderabad
12	M Sai Prasad	JITS,Karim angar
13	R Srinivas	MGIT,Hyderabad
14	JVS Arundhati	Medha ,Khammam
15	Durga Bhavani	AGI,Hyderabad
16	K Shailaja	AGI,Hyderabad
17	P Rajeswari	AGI,Hyderabad
18	Hari Prasad	AGI,Hyderabad
19	B Ujwala	AGI,Hyderabad
20	J Shiva Prashanth	AGI,Hyderabad
21	G Balram	AGI,Hyderabad
22	G Kiran Kumar	AGI,Hyderabad
23	K Raghavendra Rao	AGI,Hyderabad

24	M Madhavi	AGI,Hyderabad
25	N Pravallika	AGI,Hyderabad
26	K Manasa	AGI,Hyderabad
27	S Twinkle	AGI,Hyderabad
28	N Swetha	AGI,Hyderabad
29	U Ramesh	AGI,Hyderabad
30	B Bindu Madhavi	AGI,Hyderabad
31	G Lavanya	AGI,Hyderabad
32	R Rama Krishna	AGI,Hyderabad
33	P swetha	AGI,Hyderabad
34	M Mounika	AGI,Hyderabad
35	K Sateesh Kumar	AGI,Hyderabad
36	Ch. Mounika	AGI,Hyderabad
37	S Jyothi	AGI,Hyderabad
38	M Shanthi	Vjit, Hyderabad
39	Swarna	Vjit, Hyderabad
40	T Veda Reddy	AGI,Hyderabad

Inaugural Session:

The Faculty Development Programme was inaugurated by the lighting of lamp by Dr. Shivakumara P, Dr. K S Rao, Director, Anurag Group of Institutions, Dr. V. Vijaya Kumar, Dean CSE & IT and Dr Pavan Kumar C, FDP Coordinator.

Dr. Shivakumara emphasized the participants about the benefits of such kind of FDP. Dr. K S Rao highlighted the importance of Faculty development programmes. Dr. V. Vijay kumar highlighted the need of latest technologies towards the research.

Glimpses of Inaugural:

Learning from the FDP

Day 1:

Participants were introduced to the basics of image and video processing and how it is interlinked with forensic and surveillance applications. The following concepts were introduced to the participants: a) captions and scene text classification b) Text Detection and Text tracking in video c) skin component detection d) Temporal text detection in 2D and 3D.

Day 2:

Participants were introduced to Behavior-Oriented Social Media Image Classification. Methods to identify abnormal behaviours such as Bullying, Threatening, Neuroticism, Depression, Neuroticism-Sarcastic and Psychopathic were discussed. Some methods to identify these such as extracting features based on Hanman transform after pre-processing of image/video content was introduced to participants. The concept of fake news identification from social media and website data was introduced to participants. Also participants were instructed to implement the same using MATLAB.

Day 3:

Participants were introduced to some of the issues in smart city context such as Urbanization or recognition urban area, Converting one source text to target language (foreigners), Licence plate detection for tracing the car (security), Assisting blind person to walk freely on the road without help,

Automatic vehicle driving without pilot were introduced to the participants. The resource person's work in the area of number plate identification and sports data classification were discussed. Also, Document Image classification and identification was discussed in detail with recent solutions to improve the accuracy of text detection and identification.
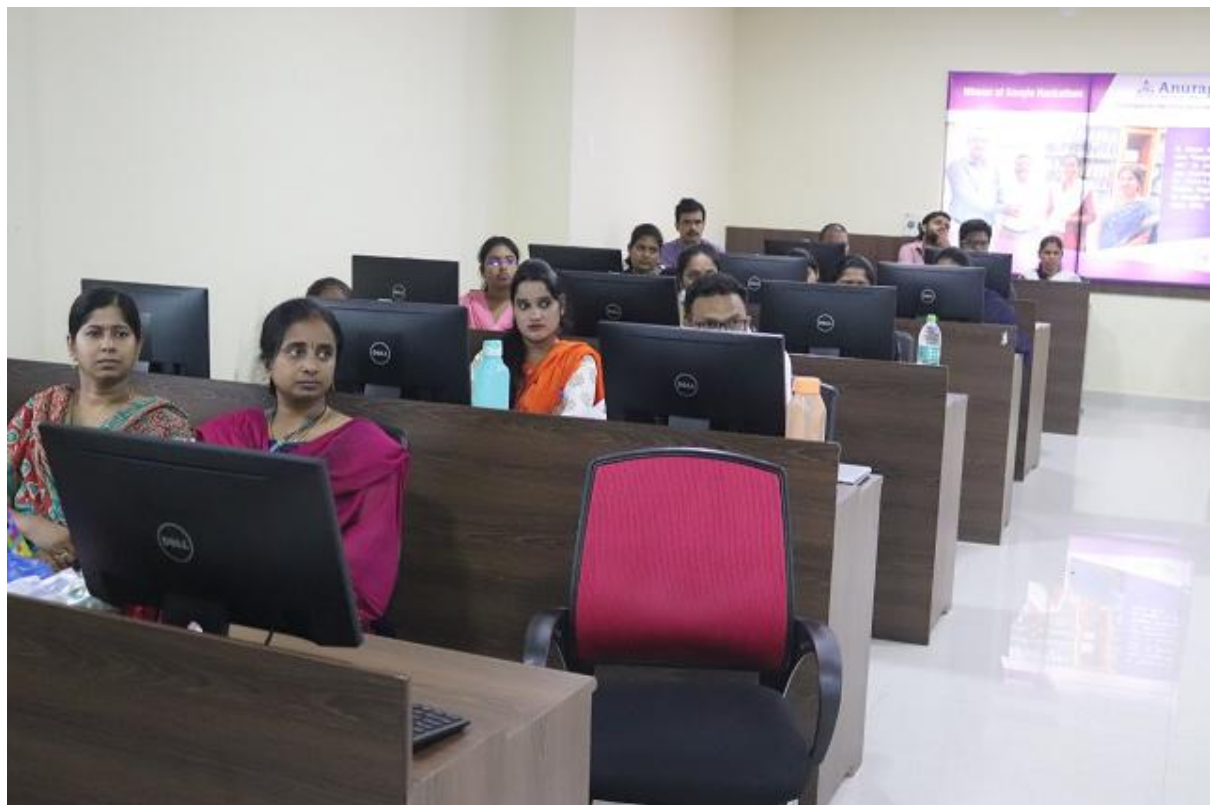
Day 4:

Participants were introduced to the concept of age and gender identification of writers based on hand writing and also tampering of image and video scenes. Some of the solutions to these problems based on multi gradient directional features, kernel based methods, and Fourier co-efficient and Multi-Orientation-Scale Gabor Response Fusion were introduced to the participants. Respective algorithms were introduced to the participants and were instructed to implement the same using MATLAB.

Day 5:

Participants were introduced to the research ideas in the areas of Image and Video Processing in the context of Forensic/Surveillance Applications. Tier 1 journal and conference paper writing and generating new ideas to write these papers were introduced. Resource person shared his experience in writing and communicating papers to the top class journals published by IEEE, Springer and Elsevier. In addition to it, how to address reviewer comments, how to revise papers were introduced.
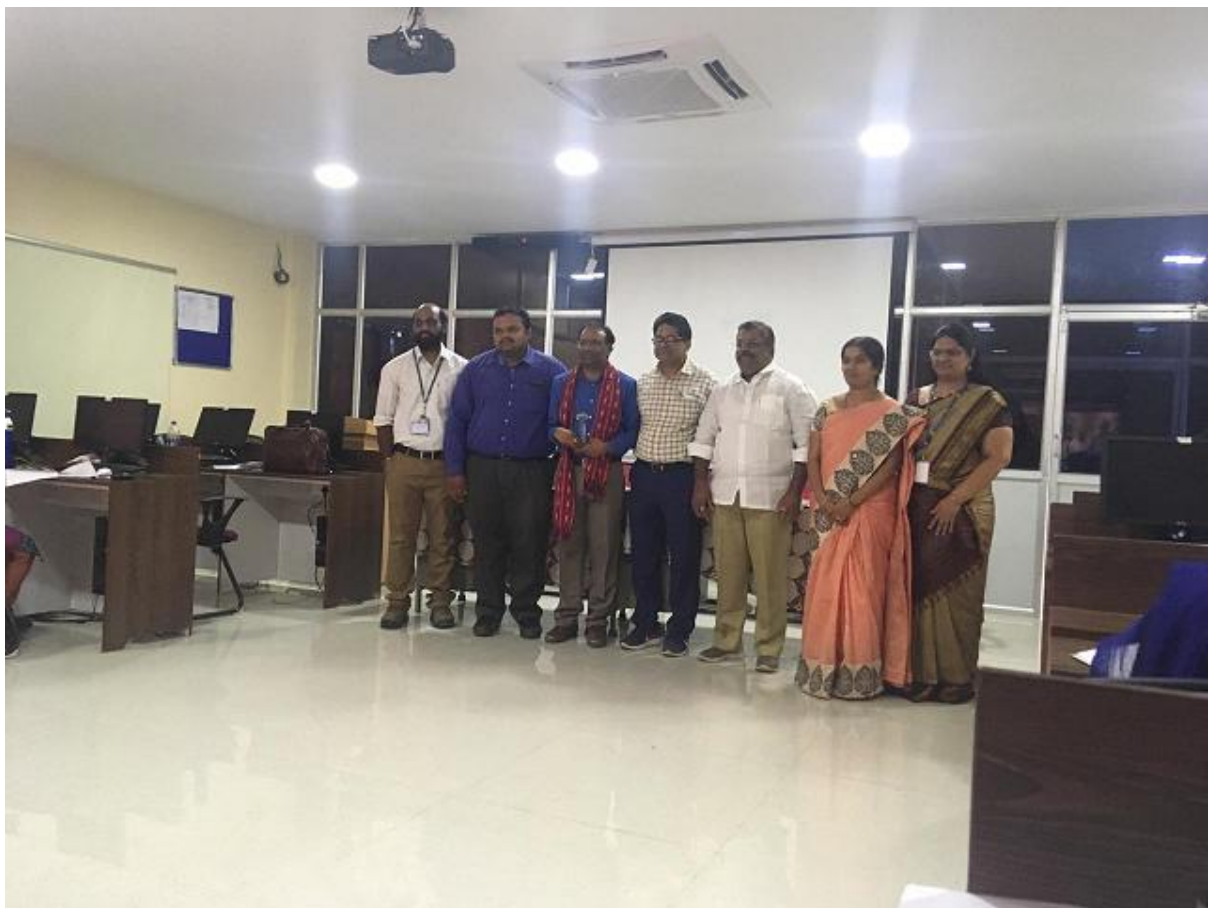
Glimpses of FDP:

Valedictory & Feed Back From participants

The participants present on this occasion summarized the programme. All the participants appreciated the department for organizing the FDP. Participants were asked to come on to the dice and share their experiences. Finally the program was concluded with Vote of Thanks by Dr. Pavan Kumar C, Assoc. Prof. & FDP Coordinator and with happy note from every one.

Participants were impressed with all the sessions as all the sessions were highly informative and interactive and also participants appreciated the efforts of the CSE department in organizing the event.

Conclusion:

All the sessions were very much informative. The discussion areas are of great benefit for the participants as the topics match with the recent technologies. Participants were enlightened with the most widely used advanced technologies. This in turn will help in research activities.