Aneeshan Sain *Curriculum vitae*

Contact Information	36/6/41, Bhattacharya Para Lane. District Howrah, West Bengal. India, Pin-711104.	(+91)-8240122870 Skype-aneeshan.sain2 saneeshan95@gmail.com

Research Interests Computer Vision, Image Processing, Machine Learning, Pattern Recognition, Deep Learning.

Education

Institute of Engineering & Management, Kolkata (India) 2017
University: Maulana Abul Kalam Azad University of Technology
Formerly known as West Bengal University of Technology

- Department of Electrical Engineering
- DGPA: 8.1/10 (Including all 8 Semesters)
- Current Status: Graduated with Bachelor of Technology (Honours)
- B.Tech Thesis: *'Intelligent Battery Management System'*

St. Xaviers Collegiate School, Kolkata (India) 2013
- Indian School Certificate(12^{th} Standard)
- Aggregrate: 94.3%

St. Xaviers Collegiate School, Kolkata (India) 2011
- Indian Certificate for Secondary Education (10^{th} Standard)
- Aggregrate: 95.2%

Refereed Journal Publications

1. **Aneeshan Sain**, Ayan Kumar Bhunia, Partha Pratim Roy, Umapada Pal, "Multi-Oriented Text Detection and Verification in Video Frames and Scene Images", **Neurocomputing**, Elsevier**(I.F.-3.317).** (DOI:10.1016/j.neucom.2017.09.089) [PDF]

   - **My Contributions:**
     - Central Idea - 75%
     - Paper Writing - 75% .
     - Experimental Setup - 60%
   - **Highlights:**
     - An efficient approach is proposed which is able to detect horizontal, non-horizontal and curvedly oriented texts in video frames and scene images.
     - The concept of skeletonization is proposed that improves the detection process of text region.
     - HMM verification is applied to improve accuracy of results.
     - Finally, the framework has been tested with 4 different scripts(English, Chinese, Hindi and Bengali) to show the efficiency.

Papers in Preparation

1. "Local diagonally symmetric pattern for color and texture image retrieval" -
   - This work takes into account the mutual information between H and S channels in HSV color space for more efficient histogram calculation in context of image retrieval task.
   - Also, a new local pattern is developed which explores the relation between every pair of symmetric neighbors about both the diagonals in a 33 window.

2. "Video Text Frame Categorization" -
   - This work aims at obtaining context information and categorizing the different types of text based on their background by implementing scene segmentation techniques.
   - A text saliency map has been aspired to achieve by combining a Laplacian approach with the Gradient Vector Flow concept.

Scientific Research Experience

Dec, 2015 to Present — Text detection in Video Frames/Scene Images, Image Retrieval, Logo Detection, Kinship Verification.
Advisor: Prof. Partha Pratim Roy, Ph.D.
- Dept. of Computer Science.
- Indian Institute of Technology, Roorkee, India.

Advisor: Prof. Dr. Umapada Pal , Ph.D.
- Head, Computer Vision and Pattern Recognition Unit.
- Indian Statistical Institute, Kolkata, India.

Relevant Projects

- Scene-text detection in Scene Image and Video Frames.
- Logo detection in Scene Images and Video Frame.
- Feature Design for Image Retrieval.
- Kinship verification(on-going)
- Deep Learning Based Scene Text Detection
- Video Text Frame Categorization

Achievements

- Secured rank 3333 in WBJEE among 1.5 lakhs students, 2013.
- Secured state rank 963 in JEEMAINS, 2013.
- Got selected in Indian Nationial Olympiad in Informatics 2013.
- Got selected in Zonal Informatics Olympiad 2013.
- Ranked 74 out of 2000 competitors in an online coding competition on Hackerrank.

Relevant Coursework

(i) Linear Algebra & Diff. Eqn. (ii) Statistics & Probability (iii) Control System
(iv) Digital Image Processing (v) Digital Signal Processing (vi) Signals and System

Technical Skills

- Programming Languages: C, C++, MATLAB, Python, JAVA.
- Low level Programming : Atmel AVR (Atmega32) & 8085 Assembly.
- ML Framework: Scikit-learn, Shogun.
- Deep Learning Framework: Tensorflow and Keras.
- Hardware Exposure: AVR Micro-controller, Arduino.
- Mathematics: Linear-algebra, Probability, Statistics.
- Miscellaneous: OpenCV, LIBSVM library, HTK library.

References

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