Rameswar Panda

Web: https://rpand002.github.io/

CONTACT INFORMATION	3131 Watkins Drive, Apt 32 Riverside, CA 92507	951-880-5556 rpand002@ucr.edu

RESEARCH INTERESTS

Computer Vision, Machine Learning, Deep Learning

EDUCATION

University of California, Riverside, CA, USA

Ph.D. Candidate, Electrical and Computer Engineering (2014-Present)
- Thesis Topic: *Sparse Modeling for Summarizing Big Video Data*
- Advisor: Amit K. Roy-Chowdhury, Ph.D

Jadavpur University, Kolkata, India

M.S., Computer Engineering, June 2013
- Thesis Topic: *Graph Theoretic Solutions for Two Multimedia Problems*
- Advisor: Ananda S. Chowdhury, Ph.D

Biju Patnaik University of Technology, Rourkela, India

B.Tech., Electronics and Telecommunication Engineering, June 2011

RESEARCH EXPERIENCE

Research Intern June 2016 to Sept 2016
Computer Vision Group,
Siemens Corporate Research, Princeton
Supervisors: Ziyan Wu and Jan Ernst

Research Assistant Sept 2014 to Present
Video Computing Group,
University of California, Riverside
Supervisor: Amit K. Roy-Chowdhury

Research Assistant June 2013 to Aug 2014
Department of ETC,
Silicon Institute of Technology
Supervisor: Milan K. Biswal

Research Assistant Aug 2011 to June 2013
IVPR Group,
Jadavpur University
Supervisor: Ananda S. Chowdhury

JOURNAL PUBLICATIONS

1. **Rameswar Panda**, Sanjay K. Kuanar, A. S. Chowdhury, "Nyström approximated temporally constrained multi-similarity spectral clustering approach for movie scene detection", Accepted to IEEE Transactions on Cybernetics (TCYB), 2016.

2. S. K. Kuanar, **Rameswar Panda**, A. S. Chowdhury, "Video Key frame Extraction through Dynamic Delaunay Clustering with a Structural Constraint", Journal of Visual Communication and Image Representation (JVCIR), Elsevier, 2013.

CONFERENCE PUBLICATIONS

1. **Rameswar Panda**, Abir Das, Amit K. Roy-Chowdhury, "Video Summarization in a Multi-View Camera Network", IEEE International Conference on Pattern Recognition (ICPR), 2016.

2. **Rameswar Panda**, Abir Das, Amit K. Roy-Chowdhury, "Embedded Sparse Coding for Summarizing Multi-View Videos", IEEE International Conference on Image Processing (ICIP), 2016.

3. Niluthpol C. Mithun, **Rameswar Panda**, Amit K. Roy-Chowdhury, "Generating Diverse Image Datasets with Limited Labeling", ACM International Conf. on Multimedia (MM), 2016.

4. Abir Das, **Rameswar Panda**, Amit K. Roy-Chowdhury, "Active Image Pair Selection for Continuous Person Re-identification", IEEE International Conference on Image Processing (ICIP), 2015.

5. **Rameswar Panda**, S. K. Kuanar, A. S. Chowdhury, "Scalable Video Summarization using Skeleton Graph and Random Walk", IEEE International Conference on Pattern Recognition (ICPR), 2014.

6. A. S. Chowdhury, S. K. Kuanar, **Rameswar Panda**, M. N. Das, "Video Storyboard Design using Delaunay Graphs", IEEE International Conference on Pattern Recognition (ICPR), 2012.

SUBMITTED PUBLICATIONS

1. **Rameswar Panda**, Amit K. Roy-Chowdhury, "Sparse Modeling for Topic-oriented Video Summarization", Submitted to IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2017.

2. **Rameswar Panda**, Niluthpol C. Mithun, Amit K. Roy-Chowdhury, "Diversity-aware Multi-Video Summarization", Submitted to IEEE Transactions on Image Processing (TIP).

3. Abir Das, **Rameswar Panda**, Amit K. Roy-Chowdhury, "Continuous Person Re-identification through Sparse Non-redundant Representative Selection", Submitted to Computer Vision and Image Understanding, Elsevier.

SELECTED PROJECTS

Visual Anomaly Detection in Images   June 2016 to Sept 2016

Formulated a weakly-supervised framework to detect visual anomalies in images which requires only binary image-level labels on specifying whether an image contains any anomalies or not. Utilized a Convolutional Neural Network (CNN) for the detection and showed that it achieves better performance compared to the state-of-the-art methods that require either pixel-wise labeling or bounding box annotations. Showed an application of the framework in defect detection on wedges which is successfully running at one of the Siemens location at Charlotte, USA.

Summarizing Multi-View Videos   Sept 2014 to Sept 2015

Formulated a stochastic frame embedding framework to preserve data correlations in a multi-view camera network. Utilized a two phase Quadratification-Lipschitzation procedure to solve the embedding objective function efficiently and showed that sparse coding combined with frame embedding achieves better performance in multi-view summarization compared to all prior works. The work has been accepted in IEEE International Conference on Image Processing (ICIP), 2016, and IEEE International Conference on Pattern Recognition (ICPR), 2016.

Scalable Video Summarization   June 2013 to Dec 2013

Proposed a scalable video summarization technique using the concept of scalable video coding from video adaption. A truly scalable approach for video summarization is designed using local graph clustering in analysis step and different forms of scalability in generation step. This work has been accepted to the IEEE International Conference on Pattern Recognition (ICPR), Oral, 2014.

Movie Scene Detection Dec 2012 to June 2013

A novel combination of Nystrom extension and multi-similarity spectral clustering with temporal integrity constraint is proposed to achieve fast as well as well performed movie scene segmentation. Moreover, application of our proposed method increases the interactivity of user in social multimedia websites like YouTube and IMDb. The work has been accepted in IEEE Transactions on Cybernatics (TCYB).

Graph Theoretic Video Summarization Aug 2011 to Dec 2012

Proposed a technique to extract key frames using Delaunay clustering with structural constraints. Showed that our approach produces better quality summaries compared to all other state-of-the-art methods using both objective and subjective comparisons. The work has been published in International Conference on Pattern Recognition (ICPR) and Journal of Visual Communication and Image Representation (JVCIR).

HONORS AND AWARDS

- Received Deans Distinguished Fellowship, University of California, Riverside. (2014)
- Selected as one of the participant (out of 25) to attend I-Care 2013 organized by IBM Research, India. (2013)
- Secured an university rank of 2 in M.S. with 91.78% from Jadavpur University. (2013)
- Secured 98.34 percentile in Graduate Aptitute Test in Engineering (GATE), India. (2011)

TEACHING EXPERIENCE

Instructor Fall 2013, Spring 2014
- Digital Signal Processing
- Image Processing
  Silicon Institute of Technology,
  Bhubaneswar, India

Teaching Assistant Autumn 2012, Spring 2013
- Numerical Analysis
- C Programming and Data Structure
  Instructor: Ananda S. Chowdhury, Ph.D
  Jadavpur University,
  Kolkata, India

SKILLS

- Programming Languages: C, C++, Matlab, Python
- Libraries: OpenCV, Torch, Caffe, TensorFlow
- Operating Systems: Windows, Unix, Mac OS
- Human Computation: Amazon Mechanical Turk
- Other Expertise: MS Office (Word, Excel, and PowerPoint), Latex etc.

COURSEWORKS

- Graduate Coursework: Stochastic Process, Convex Optimization, Advanced Computer Vision, Information Theory, Pattern Recognition, Operating Systems, Computer Architecture, Indepedent Study: Deep Learning
- Selected Undergraduate Coursework: Digital Signal Processing, Image Processing, Artificial Neural Networks, Data Structures, Computer Networks

PROFESSIONAL SERVICES

- Member: IEEE, CVF
- Conference Reviews: ICIP, ICPR, ICCV, ECCV, CVPR
- Journal Reviews: IEEE Transaction on Image Processing (TIP), Computer Vision and Image Understanding (CVIU), Pattern Recognition Letters (PRL), Signal Processing: Image Communication (SPIC)