Rameswar Panda

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Research Interests

Computer Vision: Video Summarization, Person Re-Identification
Machine Learning: Deep Learning, Sparse Coding

Education

2014-Present | **University of California, Riverside**
Ph.D. in Electrical and Computer Engineering, Advisor: Amit K. Roy-Chowdhury
Thesis: Sparse Modeling for Summarizing Big Video Data

2011-2013 | **Jadavpur University, India**
M.S. in Computer Engineering, Advisor: Ananda S. Chowdhury
Thesis: Graph Theoretic Solutions for Two Multimedia Problems

2007-2011 | **Biju Patnaik University of Technology, India**
B.Tech. in Electronics and Telecommunication Engineering

Research Experience

06.2016-09.2016 | Research Intern, Computer Vision Group
Siemens Corporate Research, Princeton, USA
Supervisors: Ziyan Wu & Jan Ernst

2014-Present | Graduate Student Researcher, Video Computing Group
University of California, Riverside, USA
Supervisor: Amit K. Roy-Chowdhury

06.2013-08.2014 | Research Assistant, Department of ETC
Silicon Institute of Technology, Bhubaneswar, India
Supervisor: Milan K. Biswal

08.2011-06.2013 | Research Assistant, IVPR Group
Jadavpur University, Kolkata, India
Supervisor: Ananda S. Chowdhury

Teaching Experience

Fall 2016 | Teaching Assistant: Stochastic Process (Graduate Level), UC Riverside
2013-2014 | Instructor: Image Processing (Undergraduate Level), Silicon Institute of Technology
2012-2013 | Teaching Assistant: C Programming (Undergraduate Level), Jadavpur University

Honors & Awards

2014 | Dean's Distinguished Fellowship Award, UC Riverside
2013 | University 2^{nd} rank in M.S., Jadavpur University
2011 | 98.34% in Graduate Aptitute Test in Engineering (GATE), India

Patents

62/430,463 | Weakly Supervised Visual Anomaly Detection and Segmentation in Images
Inventors: Rameswar Panda, Ziyan Wu, Arun Innaje, Jan Ernst
U.S. Provisional Patent Application filed on Dec 06, 2016.

Journal Publications

TIP'17 | **Rameswar Panda**, Niluthpol C. Mithun, Amit K. Roy-Chowdhury, "Diversity-aware Multi-Video Summarization", *Accepted to IEEE Transactions on Image Processing*, 2017.

TCYB'17 | **Rameswar Panda**, Sanjay K. Kuanar, A. S. Chowdhury, "Nyström approximated temporally constrained multi-similarity spectral clustering approach for movie scene detection", *IEEE Transactions on Cybernetics (In Press)*, 2017.

CVIU'16 | Abir Das, **Rameswar Panda**, Amit K. Roy-Chowdhury, "Continuous Adaptation of Multi-Camera Person Identification Models through Sparse Non-redundant Representative Selection", Computer Vision and Image Understanding, 2016.

JVCIR'13 | 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*, 2013.

Submitted | **Rameswar Panda**, Amit K. Roy-Chowdhury, "Multi-View Video Summarization via Joint Embedding and Sparse Optimization", 2017.

Conference Publications

CVPR'17 | **Rameswar Panda**, Amit K. Roy-Chowdhury, "Collaborative Summarization of Topic-Related Videos", *IEEE Conference on Computer Vision and Pattern Recognition*, 2017.

CVPR'17 | **Rameswar Panda**, Amran Hossen Bhuiyan, Vittorio Murino, Amit K. Roy-Chowdhury, "Unsupervised Adaptive Re-identification in OpenWorld Dynamic Camera Networks", *IEEE Conference on Computer Vision and Pattern Recognition*, (Spotlight), 2017.

ICASSP'17 | **Rameswar Panda**, Amit K. Roy-Chowdhury, "Sparse Modeling for Topic-oriented Video Summarization", *International Conference on Acoustics, Speech and Signal Processing*, 2017

MM'16 | Niluthpol C. Mithun, **Rameswar Panda**, Amit K. Roy-Chowdhury, "Generating Diverse Image Datasets with Limited Labeling", *ACM International Conference on Multimedia*, 2016.

ICPR'16 | **Rameswar Panda**, Abir Das, Amit K. Roy-Chowdhury, "Video Summarization in a Multi-View Camera Network", *International Conference on Pattern Recognition*, 2016.

ICIP'16 | **Rameswar Panda**, Abir Das, Amit K. Roy-Chowdhury, "Embedded Sparse Coding for Summarizing Multi-View Videos", *International Conference on Image Processing*, 2016.

ICIP'15 | Abir Das, **Rameswar Panda**, Amit K. Roy-Chowdhury, "Active Image Pair Selection for Continuous Person Re-identification", *International Conference on Image Processing*, 2015.

ICPR'14 | **Rameswar Panda**, S. K. Kuanar, A. S. Chowdhury, "Scalable Video Summarizat-ion using Skeleton Graph and Random Walk", *International Conference on Pattern Recognition*, 2014.

ICPR'12 | A. S. Chowdhury, S. K. Kuanar, **Rameswar Panda**, M. N. Das, "Video Story-board Design using Delaunay Graphs", *International Conference on Pattern Recognition*, 2012.

Selected Projects

Re-identification in Dynamic Camera Networks (Matlab) 09.2016-12.2016
Proposed an unsupervised adaptation scheme based on geodesic flow kernel that can effectively find the best source camera (already installed) to adapt with a newly introduced target camera, without requiring a very expensive training phase.

Visual Anomaly Detection in Images (Caffe, Python, C++) 06.2016-09.2016
Formulated a weakly-supervised framework based on CNNs which requires only binary image-level labels on specifying whether an image contains any anomalies or not.

Collaborative Video Summarization (Caffe, Python, Matlab) 01.2016-04.2016
Developed a collaborative sparse optimization approach to extract an informative summary of a specified video by exploiting additional knowledge from topic-related videos.

Diversity-aware Multi-Video Summarization (Caffe, Matlab) 02.2016-05.2016
Proposed a diversity-aware sparse optimization method for multi-video summarization by exploring the complementarity within the videos.

Camera Network Video Summarization (Matlab) 08.2015-01.2016
Developed an unsupervised sparse coding approach for joint representation learning of video shots and summarization of multi-view videos in a camera network.

Skills

Programming Languages: C, C++, Matlab, Python
Libraries: OpenCV, Caffe, TensorFlow, Keras
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, Computer Vision, Information Theory, Pattern Recognition, Operating Systems, Computer Architecture, Indepedent Study: Deep Learning
Selected Undergraduate Coursework: C/C++ Programming, 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 Transactions on Image Processing (TIP), Computer Vision and Image Understanding (CVIU), Pattern Recognition Letters (PRL), Signal Processing: Image Communication (SPIC)