

# Rangachar Kasturi

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**Address: Rangachar Kasturi, Ph. D.**

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**Research Interests:** Image Processing, Computer Vision, Pattern Recognition,, Video Sequence Analysis, Document Image Analysis

**Education:** Ph.D., Texas Tech University, Electrical Engineering, August 1982  
Dissertation Topic: Digital Image Restoration, Advisor: J.F. Walkup  
M.S., Electrical Engineering, Texas Tech University, May 1980  
B.E.(Electrical), Bangalore University, India, 1968

## Professional Experience:

Aug. 2003-present: Douglas W. Hood Professor, Department of Computer Science and Engineering, University of South Florida  
2003-2007: Chair, Computer Science and Engineering Department  
Sept. 1982 - 2003: The Pennsylvania State University  
1982-86: Assistant Professor of Electrical Engineering  
1986-95: Associate Professor of Electrical Engineering; tenured in 1988  
1995-2003: Professor of Computer Science and Engineering and Electrical Engineering  
Aug. 1999 - Dec. 99: Fulbright Visiting Professor, Indian Institute of Science, Bangalore  
May 1991 - Aug. 91: Summer Visiting Professor, NASA Langley Research Center  
Sept. 1989 - May 90: Visiting Scholar (on sabbatical from Penn State), Artificial Intelligence Lab., Department of EECS, University of Michigan  
Sept. 1978 - Aug. 82: Part-time Instructor and Research Assistant, Department of Electrical Engineering, Texas Tech University  
June 1976 - Aug. 78: Engineering Officer, Visvesvaraya Industrial and Technological Museum, Bangalore, India  
May 1969 - June 76: Research and Development Engineer, VHF Communication Systems Group, Bharat Electronics Ltd., Bangalore, India  
Sept. 1968 - April 69: Engineering Trainee: Mysore Electrical Industries Ltd., Bangalore, India

**Personal:** Born on June 4, 1949 in Bangalore, India. Citizen of USA through naturalization, 1990

## Honors and Awards:

Commencement Speaker and Chief Guest, IIT, Bangalore, India, 2007  
Alfred P. Sloan Foundation, Certificate of Appreciation, 2007  
Penn State Engineering Society Premier Research Award, 2002 (highest research award in the College; recipient chosen from among those who have previously won PSES Outstanding Research Award)  
Fulbright Scholar, 1999  
Elected to Texas Tech Electrical Engineering Academy, 1997  
Elected Fellow of the International Association for Pattern Recognition (IAPR), 1996 (up to 0.25%

of total membership may be elected as Fellows every two years).  
 Penn State College of Engineering Outstanding Research Award, 1996 (two to three faculty members are recognized each year from among some 275 College faculty).  
 Elected Fellow of the Institute of Electrical and Electronics Engineers (IEEE), 1995 (up to 0.1% of total membership may be elected as Fellows each year).  
 Outstanding Advising of Honors Theses Students, IEEE Student Branch, Penn State, 1989  
 IEEE CS Golden Core Member, Meritorious Service (several), Certificates of Appreciation (several), Distinguished Visitor  
 IAPR Meritorious Service and Certificates of Appreciation (several)

### **Leadership Responsibilities:**

President and Chair of the Board of Governors, *IEEE Computer Society*, 2008; President-elect, 2007, First Vice President, Conferences and Tutorials, 2006; Treasurer, 2004-2005; Vice President, Publications, 2001-2003; Member of the Executive Committee, 2001-present  
 General Co-Chair, *International Conference on Pattern Recognition*, 1,100 Delegates from 47 countries, Tampa, 2008  
 Chair, Department of Computer Science and Engineering, USF, August 2003 - December 2007  
 President, *International Association for Pattern Recognition*, 2002-2004; First Vice President, 2000-2002; Second Vice President, 1998-2000; Member of the Executive Committee, 1998-2006  
 General Co-Chair, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2001  
 General Co-Chair, *International Conference on Document Analysis and Recognition*, 1999  
 Editor-in-Chief, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 1995-1998  
 Editor-in-Chief, *Machine Vision and Applications Journal*, 1993-94  
 Acting Director, Computer Engineering Program, Penn State University, 1990-91

### **Professional Activities (other than those listed above):**

Member, *Board of Governors*, Computing Research Association, 2009-10  
 Chair, *ICPR Standing Committee*, International Association for Pattern Recognition, 2008-10  
 Chair, *Membership Committee, Nominations Committee, Inter-Society Cooperation Committee, and Personnel and Compensation Committee*, IEEE Computer Society, 2009  
 Chair, IEEE President's *Focus on India* initiative, 2008 and Co-Chair, *IEEE India Ad Hoc Committee*, 2009  
 Member, *IEEE Executive Director Search Committee*, 2008-09  
 Chair, *Planning Committee and Constitution and Bylaws Committee*, IEEE Computer Society, 2007  
 Member, *Nominations Committee, Finance Committee and Personnel and Compensation Committee*, IEEE Computer Society, 2007  
 General Co-chair, *Indian Conference on Computer Vision, Graphics, and Image Processing*, 2006  
 Co-chair, *Transformation Planning Committee*, IEEE Computer Society, 2006  
 Member, *Transformation Task Force*, IEEE Computer Society, 2006  
 Co-Chair, *Presidential Task Force on Conference Business Model*, IEEE Computer Society, 2006  
 Member, *Indirect Infrastructure Ad Hoc Committee*, IEEE TAB FinCom, 2005  
 Member, *Periodicals Packages Committee*, IEEE TAB, 2004-2005  
 Member, *IEEE Technical Activities Board Periodicals Committee*, 2001-2005  
 Member, *IEEE Publication Services and Products Board*, 2001-2003  
 General Co-Chair, Technical Program, *International Conference on Pattern Recognition*, Quebec City, 2002  
 Chair, Transactions Operations Committee, *IEEE Computer Society*, 2000  
 Governing Board Member, IAPR, 2000-present  
 Associate Editor, *International Journal of Document Analysis and Recognition*, 1998-present  
 Associate Editor, *Machine Vision and Applications journal*, 1995-2005

Associate Editor, *Pattern Recognition*, 1994-present  
 Guest Editor (with K. Bowyer and P. Flynn), 20<sup>th</sup> Anniversary Special Issue of *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2000  
 Chair, *Transactions Review Committee*, IEEE Computer Society, 2000  
 Chair, Editor-in-Chief Search Committee, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2000  
 IAPR Representative to the *International Federation of Information Processing Societies*, 1998-2000  
 Local Arrangements Chair, *International Conference on Document Analysis and Recognition*, IAPR, Bangalore, India, September 1999  
 Member, *Transactions Operations Committee and Publications Board*, IEEE Computer Society, 1995-98  
 Member, Editorial Board, *Encyclopedia of Electrical and Electronics Engineering*, John Wiley, 1996-97  
 Program Co-Chair, *International Conference on Document Analysis and Recognition*, IAPR, Montreal, Canada, August 1995  
 General Chair, *IAPR Workshop on Graphics Recognition*, 1995  
 Chair, Publications and Publicity Committee, *IAPR*, 1992-94  
 Associate Editor, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 1991-94  
 Guest Editor (with L. O'Gorman), *Computer*, Special issue on Document Image Analysis Systems, IEEE Computer Society, July 1992, *Machine Vision and Applications*, Special issues on Document Image Analysis Techniques, Springer-Verlag, August 1992 and May 1993  
 General Co-Chair, *IAPR Workshop on Machine Vision Applications*, Tokyo, November 1990  
 Chair, Technical Committee on Graphics Recognition, *IAPR*, 1988-92  
 Program committee member at the following conferences and workshops (1991-2004; have not been tracking these since 2004):  
 International Conferences on Document Analysis and Recognition, St. Malo, France, 1991 and Tsukuba Science City, Japan, 1993, Ulm, Germany, 1997, Seattle, Washington, 2001  
 International Conferences on Pattern Recognition, The Hague, 1992, Jerusalem, 1994, Vienna, 1996, Barcelona, 2000, Cambridge, UK, 2004  
 IEEE Computer Vision and Pattern Recognition Conferences, Seattle, 1994, San Francisco, 1996, San Juan, PR, 1997, Santa Barbara, 1998 (Area Chair)  
 Symposiums on Document Analysis and Information Retrieval, Las Vegas, 1993 and 1994  
 IAPR Workshop on Syntactic and Structural Pattern Recognition, Haifa, Israel, 1994  
 IAPR Workshop on Image Databases and Multimedia Search, Amsterdam, 1996  
 IAPR Workshop on Visual Form, Capri, Italy, 1997, 2001  
 IEEE Workshop on Content-based Access of Image and Video Libraries, San Juan, Puerto Rico, 1997  
 Second International Conference on Visual Information Systems, San Diego, 1997, Amsterdam, 1999  
 International Workshops on Graphics Recognition, Nancy, France, 1997, Jaipur, India, 1999  
 First and Second Brazilian Symposiums on Document Image Analysis, Curitiba, Brazil, 1997  
 Asian Conferences on Computer Vision, Hong Kong, 1998, 2000, Melbourne, 2002  
 Vision Interface, Canada, 1998, 1999  
 Indian Conferences on Computer Vision, Graphics, and Image Processing, New Delhi, 1998, Bangalore, 2000  
 International Conference on Artificial and Computational Intelligence, Tunisia, 2000  
 IEEE Workshop on Applications of Computer Vision, Palm Springs, CA, 2000  
 IAPR Workshop on Document Analysis Systems, Rio de Janeiro, 2000  
 Session chairman at numerous conferences  
 Invited speaker at numerous institutions and conferences  
 Tutorial speaker at numerous events  
 Consultant, United Nations Development Program TOKTEN in India, 1993  
 Consultant, AT&T Bell Labs, 1990-92

## Service to the Department and University:

### *At the University of South Florida:*

|  |           |
|--|-----------|
| University Class Scheduling Advisory Committee   | 2003-2004 |
| Search Committee for Assistant VP, Institutional Research  | 2004-2005 |
| Numerous other committees in my role as the Chair of CSE department<br>(ABET visit in 2007 - CS and CE Programs received full accreditation) | 2003-2007 |
| Search Committee for Electrical Engineering Department Chair   | 2009      |

### *At Penn State:*

|   |                    |
|---|--------------------|
| CSE Personnel Committee - Faculty Recruitment                   | 1997-99, 2000-2003 |
| CSE Publications Committee                                      | 2002-2003          |
| CSE Department Head Search Advisory Committee                   | 2000-2001          |
| CSE Awards Committee (Chair 2000-2001)                          | 1999-2001          |
| IST-CSE Building Committee                                      | 2000-2001          |
| College Endowed Professor Evaluation Committee (Chair: 2001-02) | 2000-02            |
| CSE ABET-2000 Planning Committee                                | 1998-99            |
| CSE Promotion and Tenure Committee (Chair 1995-97)              | 1995-99            |
| CSE Strategic Planning Committee                                | 1997-98            |
| CSE Department Head Search Advisory Committee                   | 1996-97            |
| Evaluation Committee, Operations Research Program               | 1996               |
| CSE Graduate Committee  | 1994-97            |
| CSE Climate Committee:  | 1993-95            |
| Engineering Advising Center, Faculty Representative:            | 1993 - 94          |
| Computer Engineering Area Committee (EE):                       | 1993 - 94          |
| Electrical Engineering Laboratory Committee:                    | 1993 - 94          |
| Implementation Team, CS and Computer Engineering Merger         | 1993               |
| EE Space Committee:   | 1992 - 93, 90 - 91 |
| EE Personnel Committee (Faculty Recruiting):                    | 1991               |
| EE Promotion and Tenure Committee:                              | 1990-93, 88 - 89   |
| Faculty Coordinator, PC Lab                                     | 1990 - 93          |
| Acting Director, Computer Engineering Program:                  | 1990 - 91          |
| EE Advisory Committee:  | 1990 - 91          |
| EE Graduate Steering Committee:                                 | 1987 - 89          |
| Systems Manager, Computer Engineering Research Lab:             | 1985 - 93          |
| EE Department Head Search Committee:                            | 1985 - 86          |
| Singer Professorship Search Committee:                          | 1984 - 86          |
| Leonhard Professorship Search Committee:                        | 1984 - 86          |
| EE Undergraduate Curriculum Committee:                          | 1983 - 86          |

## Courses Taught (\* New courses developed by R. Kasturi):

|                       |                             |   |
|-----------------------|-----------------------------|---|
| <b>At USF:</b>        | *CAP 4410:                  | Introduction to Computer Vision                         |
|                       | CAP 6638:                   | Pattern Recognition                                     |
|                       | *CIS 6930:                  | Document Image Analysis                                 |
| <b>At Penn State:</b> | * CSE 597:                  | Special Topics: Document Image Analysis                 |
|                       | * CSE/EE 586:               | Computer Vision   |
|                       | CSE/EE 583:                 | Pattern Recognition                                     |
|                       | * CSE/EE 486:               | Fundamentals of Computer Vision                         |
|                       | * CMPEN 485:                | Introduction to Applications of Artificial Intelligence |
|                       | CMPEN 472:                  | Mini/Microcomputers                                     |
| EE/CSE 447:           | Digital Integrated Circuits |   |

|               |  |
|---------------|--|
| * EE/CSE 585: | Digital Image Processing II                    |
| EE 561:       | Information Theory                             |
| * EE/CSE 485: | An Introduction to Digital Image Processing    |
| EE 352:       | Signals and Circuits                           |
| EE 305:       | Electronic Measuring Systems                   |
| EE 163:       | Electrical Measurements                        |
| PSU 012:      | Lights, Camera, Algorithms! (Freshman Seminar) |

|                       |             |                                      |
|-----------------------|-------------|--------------------------------------|
| <b>At Texas Tech:</b> | EE 3311:    | Electronics I                        |
|                       | EE 3323:    | Communication Systems                |
|                       | EE 231,232: | Principles of Electrical Engineering |
|                       | EE 233:     | Electrical Systems Analysis          |
|                       | EE 234:     | Electrical Instrumentation           |
|                       | EE 4332:    | Experimental Problems                |

**Research Projects** (R. Kasturi - Sole or lead principal investigator unless indicated otherwise)  
Organized chronologically by ending date.

Image Analysis Techniques for Cartographic Data Processing, *NSF Research Initiation Grant* ECS-8307445 and ECS-8414389, 1983-86, \$53,000

Singular Value Decomposition for Image Restoration, *Naval Sea Systems Command* (through ARL - Penn State), Co-PI: Prof. L.H.Sibul, 1985-86, \$22,600

Research and Instruction in Image Processing, *AT&T Foundation*, 1985-86, \$26,900

Graphics Recognition and Interpretation System, *Digital Equipment Corporation*, 1985-89, \$462,440

Analysis of Image Sequences from Sensors for Restricted-Visibility Operations, *NASA Langley Research Center*, 1992-94, \$207,218

Center for Intelligent Information Processing, *HRB Systems* (an E-Systems/ Raytheon Company), 1994-95, Start-up funds of \$200,000 cash plus \$100,000 in equipment (S. Kumara ,Lead PI)

Classification of Invoices by Graphical Signature Analysis, *Xerox Document Services Technology Center*, 1995, \$15,000

A Visual Information Management System, *IBM Shared University Research Program*, 1994-96, \$167,018 (equipment grant based on a research proposal)

Intelligent Interpretation of Central Office Engineering Drawings, *NYNEX Corporation*, 1992-97, \$526,602

A Vision-based Obstacle Detection System for Aircraft Navigation, *NASA Ames Research Center*, Co-PI: O. Camps, 1994-97, \$321,567

An Evaluation of the State-of-the-Art in Video Indexing, *Department of Defense*, 1995-98, \$282,828

Performance Characterization of Obstacle Detection Algorithms for Aircraft Navigation, *NASA Ames Research Center*, Co-PI: O. Camps, 1997-99, \$343,380

Video Text Detection, *Department of Defense*, 1998 - 2001, \$389,694

Obstacle Detection for Rotor-craft Navigation, *NASA Ames Research Center*, Co-PI: O. Camps, 2000-02, \$93,650

Performance Evaluation of Video Object Detection and Tracking Algorithms, *Department of Defense*, July 2001 - June 2003, \$274,275

Obstacle Detection for Aircraft Navigation Using Infrared Images, *NASA Ames Research Center*, Co-PI: O. Camps, 2002-03, \$59,950

Biometric Technology Study, *DoD (through STS International) and Florida High Technology Corridor Matching Grant*, CoI: D. Morel, J. Zayas-Castro, S. Sarkar, and R. Sankar, Aug. 2003 - May 2006, \$1,200,000

Performance Evaluation for VACE Phase 2, *DTO-ARDA (NSA - DoD)*, Co-PI: D. Goldgof, Sept. 2004 - May 2007, \$1,960,411.

Research and Education in Pattern Recognition, *USF Investment in Graduate Education and Research*, Aug. 2007- Dec. 2009, \$1.0 Million

Tactical Networks and Workforce Training, *TeamTACLAN (US SOCOM)*, Co-PI: J. Zayas-Castro, Aug., 2007 - Aug. 2009, \$845,000 (for Year 1)

**Selected but Unfunded:**

Florida Imaging and Recognition Systems and Technology Center of Excellence (with UCF), \$11.7M 2008 (selected by Florida Technology, Research, and Scholarship Board after extensive peer review but the Florida legislature redirected the allocated funds after the process was completed)

**Miscellaneous Grants** (not associated with a specific research project):

Image and Signal Processing Research Laboratory, *Penn State Alumni Fund*, College of Engineering, 1985, \$50,900

SPIE Educational Grant, *SPIE*, 1986, \$1,500

AT&T Computer Equipment Donation (coordinator), *AT&T*, 1985-1988, \$1,091,625

Analysis of Fourier Images for Semiconductor Wafer Monitoring, *Semiconductor Research Corporation*, (R. Jain - Principal Investigator); part of my sabbatical salary was covered through this research at the University of Michigan, 1990, \$10,000

NASA/ASEE Summer Faculty Fellowship, *NASA Langley Research Center*, 1991, \$10,000

Preparation of the text book, *Introduction to Machine Vision* by Jain/Kasturi/Schunck, *McGraw-Hill*, 1994-95, \$10,000

First International Workshop on Graphics Recognition (held at Penn State), *Department of Defense*, 1995, \$39,942

Robust Purposive Vision Lab (Equipment), *NSF/CISE Instrumentation*, Co-PIs: O. Camps, M. Sznaier, 1996, \$135,234

Gift to Computer Vision Research Laboratory by *Hwa-Tse Liang*, a former advisee, \$40,000

**Patents:**

P.K. Mohanty, S. Sarkar and R. Kasturi, Reconstruction of Biometric Image Templates Using Match Scores, Patent Application filed on August 6, 2008.

P.K. Mohanty, S. Sarkar and R. Kasturi, From Scores to Face Templates: A Model Based Approach, Patent Disclosure, 60/954,187 filed on August 6, 2007.

**Professional Memberships:**

Association for Computing Machinery, Member

IEEE, Fellow

Member (and published in the Transactions) of the following Societies:

IEEE Aerospace and Electronic Systems Society

IEEE Circuits and Systems Society

IEEE Computer Society

IEEE Engineering in Medicine and Biology Society

IEEE Instrumentation and Measurement Society

IEEE Signal Processing Society

IEEE Systems, Man and Cybernetics Society

Sigma Xi, Eta Kappa Nu, Optical Society of America, SPIE (past memberships)

## Publications:

Citations on Google Scholar(as of 2/10/2009): Over 4,000, [H-Index: 25](#)

### Books:

- O'Gorman, L. and R. Kasturi, *Document Image Analysis: Executive Briefings*, IEEE Computer Society Press, Los Alamitos, CA, 1997
- Kasturi, R. and K. Tombre, Editors, *Graphics Recognition: Methods and Applications*, [Post-Proceedings of The First International Workshop on Graphics Recognition (August 1995) Penn State], Springer-Verlag LNCS 1072, Heidelberg, Germany, 1996 (see also Pre-Proceedings of The First International Workshop on Graphics Recognition, Penn State, University Park, PA, August 1995)
- Jain, R.C., R. Kasturi, and B. Schunck, *Machine Vision*, an introductory text, McGraw Hill, New York, 1995
- O'Gorman, L. and R. Kasturi, *Document Image Analysis* (contains chapter introductions and reprints of selected papers), IEEE Computer Society Press, Los Alamitos, CA, 1995
- Kasturi, R. and R.C. Jain, *Computer Vision: Principles*, a tutorial text (contains chapter introductions and reprints of selected papers), IEEE Computer Society Press, Los Alamitos, CA, 1991
- Kasturi, R. and R.C. Jain, *Computer Vision: Advances and Applications*, (contains brief chapter introductions and reprints of selected papers), IEEE Computer Society Press, Los Alamitos, CA, 1991
- Kasturi, R. and M.M. Trivedi (editors), *Image Analysis Applications*, Marcel Dekker, New York, 1990

### Book Chapters:

- Kong, B., I. T. Phillips, R. M. Haralick, A. Prasad, and R. Kasturi, *A Benchmark: Performance Evaluation of Dashed-Line Detection Algorithms*, in *Graphics Recognition: Methods and Applications*, Springer-Verlag LNCS 1072:270-285, 1996
- Kasturi, R. and K. Tombre, *Summary and Recommendations*, in *Graphics Recognition: Methods and Applications*, Springer-Verlag LNCS 1072:301-308, 1996
- Kosiba, D. and R. Kasturi, *Machine Vision*, in *The Electronics Handbook*, ed. J. Whitaker, CRC Press, pp. 1915-1938, 1996
- Kasturi, R., *Image Analysis Techniques for Geographic Information Systems*, in *Image Analysis Applications*, Marcel Dekker, pp. 127-163, 1990
- Bow, S.T. and R. Kasturi, *A Graphics Recognition System for Interpretation of Line Drawings*, in *Image Analysis Applications*, Marcel Dekker, pp. 37-72, 1990
- Kasturi, R. and J.F. Walkup, *Nonlinear Image Restoration in Signal-dependent Noise*, in *Advances in Computer Vision and Image Processing*, ed: T.S. Huang, pp. 167-212, JAI Press, 1986

### Journal Articles:

- Kasturi, R., D. Goldgof, P. Soundararajan, V. Manohar, J. Garofolo, R. Bowers, M. Boonstra, V. Korzhova, and J. Zhang, "Framework for Performance Evaluation of Face, Text, and Vehicle Detection and Tracking in Video: Data, Metrics, and Protocol", *IEEE Trans. Pattern Analysis and Machine Intelligence*, vol. 31 (2):319-336, 2009
- Min, J and R. Kasturi, "Extraction and Temporal Segmentation of Multiple Motion Trajectories in Human Motion," *Image and Vision Computing*, Vol. 26(12):1621-1635, 2008

- Mohanty, P.K., S. Sarkar, R. Kasturi, and P.J. Phillips, "Subspace Approximation of Face Recognition Algorithms: An Empirical Study," *IEEE Transactions on Information Forensics and Security*, Vol. 3(4):734-748, 2008
- Candamo, J., R. Kasturi, D. Goldgof, and S. Sarkar, "'Detection of thin lines using low quality video from low altitude aircraft in urban settings" Accepted for publication in *IEEE Transactions on Aerospace and Electronic Systems*, 2008
- Vajaria, H., T. Islam, P. Mohanty, S. Sarkar, R. Sankar, R. Kasturi, "Evaluation and Analysis of a Face and Voice Outdoor Multi-biometric System", *Pattern Recognition Letters*, Vol. 28(12):1572-1580, 2007
- Mohanty, P.K., S. Sarkar, R. Kasturi, "From Scores to Face Template: A Model-based Approach", *IEEE Transactions on Pattern Analysis and Machine Intelligence*, Vol. 29(12):2065-2078, 2007
- Gandhi, T., M.T. Yang, R. Kasturi, O. Camps, L. Coraor, J. McCandless, "Performance Characterization of the Dynamic Programming Obstacle Detection Algorithm," *IEEE Transactions on Image Processing*, Vol.15(5):1202-1214, 2006
- Gandhi, T., M.T. Yang, R. Kasturi, O. Camps, L. Coraor, J. McCandless, "Detection of Obstacles in the Flight Path of an Aircraft," *IEEE Transactions on Aerospace and Electronic Systems*, Vol. 39(1):176-191, 2003
- Crandall, D., S. Antani, and R. Kasturi, "Extraction of Special Effects Caption Text Events in Video," *International Journal on Document Analysis and Recognition*, Vol.5(2-3):138-157, 2003
- Yang, M.T., R. Kasturi, and A. Sivasubramaniam, "A Pipeline-based Approach for Scheduling Video Processing Algorithms on Network of Workstations," *IEEE Transactions on Parallel and Distributed Systems*, Vol 14(2):119-130, 2003
- Yang, M.T., T. Gandhi, R. Kasturi, L. Coraor, O. Camps, and J. McCandless, "Real-Time Implementation of Obstacle Detection Algorithms on a Datacube MaxPCI Architecture," *Real Time Imaging*, 8(2):157-172, 2002
- Antani, S., R. Kasturi, and R. Jain, "A survey on the use of pattern recognition methods for abstraction, indexing and retrieval of images and video ," *Pattern Recognition*, Vol. 35, pp. 945-965, 2002
- Chakravarthy, S., R. Sharma, and R. Kasturi, "Non-contact Level Sensing Technique Using Computer Vision," *IEEE Transactions on Instrumentation and Measurement*, 51(2):353-361 , 2002
- Kasturi, R., L. O'Gorman, and V. Govindaraju, "Document Image Analysis: A Primer," *Sadhana*, Indian Academy of Sciences, Special Issue on Indian Language Document Analysis and Understanding, 27(1):3-22, 2002
- Gandhi, T. and R. Kasturi, "Computer Vision Methods for Aircraft Navigation and Obstacle Detection," *Proceedings of the Indian National Science Academy, PINSA-A* 67:2, pp. 167-186, 2001
- Gargi, U. R. Kasturi, S. H. Strayer, "Performance Characterization of Video-Shot-Change Detection Methods", *IEEE Transactions on Circuits and Systems for Video Technology* 10:1-13, 2000
- Gandhi, T., S. Devadiga, R. Kasturi, O. Camps, " Detection of Obstacles on Runways Using Ego-Motion Compensation and Tracking of Significant Features", *Image and Vision Computing [Journal]*, Special Issue on Applications of Computer Vision 18:805-815, 2000
- Devaux, P. M., D. B. Lysak, R. Kasturi., "A Complete System for the Intelligent Interpretation of Engineering Drawings", *International Journal on Document Analysis and Recognition* 2(2/3):120-131, 1999
- Arias, J. and R. Kasturi, "Efficient Extraction of Primitives from Line Drawings Composed of Horizontal and Vertical Lines," *Machine Vision and Applications*, 10(4):214-221, 1997
- Chandran, S., S. Balasubramanian, T. Gandhi, A. Prasad, R. Kasturi, and A. Chhabra, "Structure Recognition and Information Extraction from Tabular Documents," *International Journal of Imaging Systems and Technology*, 7:289-303, 1996
- Tang, Y.-L. and R. Kasturi, "Tracking Moving Objects During Low Altitude Flight," *Machine Vision and Applications*, 9(1):20-31, 1996

- Kao, C.Y, S.R.T. Kumara, and R. Kasturi, "Extraction of 3-D Object Features from CAD Boundary Representation Using Super Relation Graph Method," *IEEE Trans. Pattern Analysis and Machine Intelligence*, 17(12):1228-1233, 1995
- Arias, J.F., C.P. Lai, S. Chandran, R. Kasturi, and A. Chhabra, "Interpretation of Telephone System Manhole Drawings," *Pattern Recognition Letters*, 16(4):365-369, 1995
- Lysak, D.B., P. Devaux, and R. Kasturi, "View Labeling for Automated Interpretation of Engineering Drawings," *Pattern Recognition*, 28(3):393-407, 1995
- Tang, Y.L. and R. Kasturi, "Accurate Estimation of Object Location in an Image Sequence Using Helicopter Flight Data," *Robotics and Computer Integrated Manufacturing* 11(2):65-72, 1994
- Lai, C.P. and R. Kasturi, "Detection of Dimension Sets in Engineering Drawings," *IEEE Trans. Pattern Analysis and Machine Intelligence* 16(8):848-855, 1994
- Kumara, S.R.T., C.Y. Kao, M.G. Gallagher, and R. Kasturi, "3-D Interacting Manufacturing Feature Recognition," *Annals of the CIRP* 43(1):133-136, 1994
- Kasturi, R. and L. O'Gorman, "Document Image Analysis Techniques: An Introduction," special issues of *Machine Vision and Applications*, 5(3):141-142, 1992 and 6(2-3):67-68, 1993
- Kasturi, R. and L. O'Gorman, "Document Image Analysis: A Bibliography," special issue of *Machine Vision and Applications*, 5(3):231-243, 1992
- O'Gorman, L. and R. Kasturi, "Transcribing for Reuse: Document Image Analysis Systems," special issue of *Computer*, 25(7):5-8, July 1992
- Lazarus, M.A., R. Kasturi and R.C. Jain, "Automated Analysis of Fourier Images for Semiconductor Wafer Monitoring," *Optical Engineering*, 31(2):295-303, February 1992
- Kasturi, R., S.T. Bow, W. El-Masri, J. Shah, J.R. Gattiker and U.B. Mokate, "A System for Interpretation of Line Drawings," *IEEE Trans. Pattern Analysis and Machine Intelligence*, 12(10):978-992, October 1990
- Kasturi, R., R. Fernandez, M. Amlani, W-C. Feng, "Map Data Processing in Geographical Information Systems," *Computer*, 22(12):10-21, December 1989
- Shih, C-C. and R. Kasturi, "Extraction of Graphic Primitives from Images of Paper-based Drawings," *Machine Vision and Applications*, 2:103-113, 1989
- Kasturi, R. and J. Alemany, "Information Extraction from Images of Paper-based Maps for Query Processing," *IEEE Trans. Software Engineering (special section on Image Databases)*, 14:671-675, 1988
- Fletcher, L.A. and R. Kasturi, "A Robust Algorithm for Text String Separation from Mixed Text/Graphics Images," *IEEE Trans. Pattern Analysis and Machine Intelligence*, 10:910-918, 1988
- McGlone, J.S., L.S. Hibbard, R.A. Hawkins, and R. Kasturi, "A Computerized System for Measuring Cerebral Metabolism," *IEEE Trans. Bio-Medical Engineering*, 34:704-712, 1987
- Amin, T.J. and R. Kasturi, "Map Data Processing: Recognition of Lines and Symbols," *Optical Engineering*, 26:354-358, 1987
- Kasturi, R., J.F. Walkup, and T.F. Krile, "Adaptive Point Estimation in Signal-dependent Noise," *IEEE Transactions on Systems, Man, and Cybernetics*, 15:352-359, 1985
- Kasturi, R., J.F. Walkup, and T.F. Krile, "Image Restoration in Signal-dependent Noise using a Markovian Covariance Model," *Computer Vision, Graphics, and Image Processing*, 28:363-376, 1984
- Kasturi, R., J.F. Walkup, and T.F. Krile, "Image Restoration by Transformation of Signal-dependent Noise to Signal-independent Noise," *Applied Optics*, 22:3537-3542, 1983
- Kasturi, R., J.F. Walkup, and T.F. Krile, "Image Recovery from Signal-dependent Noise," *Optics Letters*, 8:401-403, 1983
- Kasturi, R., J.F. Walkup, and T.F. Krile, "Multiplex Holography for Space-Variant Processing - A Transfer Function Sampling Approach," *Applied Optics*, 20:881-886, 1981

### Messages/Editorials:

- Kasturi, R., "President's Message - Enhancements to Society's Products and Services: Report of Progress Made in 2008," *Computer*, 41(12):7-9, December 2008
- Kasturi, R., "President's Message - Shaping the Computing Profession's Future," *Computer*, 41(5):67, May 2008
- Kasturi, R., "President's Message - 2008: The Year of Revitalization," *Computer*, 41(1):8-9, January 2008
- Kasturi, R., "Welcome Message," *IEEE Transactions on Mobile Computing* 1(1):1, 2002
- Bowyer, K., P. Flynn, R. Kasturi., "The Twentieth Anniversary of IEEE Transactions on Pattern Analysis and Machine Intelligence," *IEEE Transactions on Pattern Analysis and Machine Intelligence* 22(1):1-3, January 2000
- Kasturi, R. (editor-in-chief). December 1998, "Editorial: State of PAMI", *IEEE Transactions on Pattern Analysis and Machine Intelligence* 20(12):1281-1282, December 1998
- Kasturi, R., *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 19(7), July 1997
- Kasturi, R., *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 18(2):97-98, February 1996
- Kasturi, R., *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 17(1):1, January 1995
- Kasturi, R., *Machine Vision and Applications*, 8(1):1, 1995

### **Papers in Conference Proceedings:**

- Vajaria, H., S. Sarkar, and R. Kasturi, "Clip Retrieval, Using Multi-Modal Biometrics in Meeting Archives," *Proceedings of the Nineteenth International Conference on Pattern Recognition*, Tampa, 2008
- Sulman, N., T. Sanocki, D. Goldgof and R. Kasturi, "How Effective is Human Visual Surveillance Performance?", *Proceedings of the Nineteenth International Conference on Pattern Recognition*, Tampa, 2008
- Zhang, J., D. Goldgof and R. Kasturi, "A New Edge-Based Text Verification Approach for Video," *Proceedings of the Nineteenth International Conference on Pattern Recognition*, Tampa, 2008
- Zhang, J. and R. Kasturi, "Extraction of Text Objects in Video Documents: Recent Progress," *Proceedings of the Eighth IAPR International Workshop on Document Analysis Systems*, pp. 5-17, Nara, Japan, 2008
- Manohar, V., P. Soundararajan, V. Korzhova, M. Boonstra, D. Goldgof, R. Kasturi, R. Bowers, and J. Garofolo, "A Baseline Algorithm for Face Detection and Tracking in Video", *Proceedings of SPIE, Europe Symposium on Security and Defence*, Volume 6741, 2007
- Soundararajan, P., M. Boonstra, V. Manohar, V. Korzhova, D. Goldgof, R. Kasturi, S. Prasad, H. Raju, R. Bowers, J. Garofolo, "Evaluation Framework for Video OCR," *Indian Conference on Computer Vision, Graphics, and Image Processing, ICVGIP, LNCS 4338*, pp. 829-836, Madurai, India, 2006
- Mohanty, P.K., S. Sarkar, R. Kasturi, "A Non-Iterative Approach to Reconstruct Face Templates from Match Scores," *Proceedings of the Eighteenth International Conference on Pattern Recognition*, Vol. 4, pp. 598-601, Hong Kong, 2006
- Vajaria, H., T. Islam, S. Sarkar, R. Sankar, R. Kasturi, "Audio Segmentation and Speaker Localization in Meeting Videos," *Proceedings of the Eighteenth International Conference on Pattern Recognition*, Vol. 2, pp. 1150-1153, Hong Kong, 2006
- Manohar, V., M. Boonstra, V. Korzhova, P. Soundararajan, D. Goldgof, R. Kasturi, S. Prasad, H. Raju, R. Bowers, and J. Garofolo, "PETS vs. VACE Evaluation Programs: A Comparative Study," *Proceedings of the Ninth IEEE International Workshop on Performance Evaluation of Tracking and Surveillance*, ISBN 0-7049-1422-0, pp. 1-6, 2006
- Mohanty, P., Sarkar, S., Kasturi, R., "Privacy & Security Issues Related to Match Scores," *IEEE Computer Vision and Pattern Recognition Workshop*, New York, June 2006

- Vajaria, H., T. Islam, P. Mohanty, S. Sarkar, R. Sankar, R. Kasturi, "An Outdoor Biometric System: Evaluation of Normalization and Fusion Schemes for Face and Voice," *Proceedings of SPIE, Biometric Technology for Human Identification III*, Vol. 6202, Orlando, 2006
- Candamo, J., R. Kasturi, D. Goldgof, and S. Sarkar, "Vision-based on-board collision avoidance system for aircraft navigation," *Proceedings of SPIE, Unmanned Systems Technology VIII*, Vol. 6230, Orlando, 2006
- Manohar, V., P. Soundararajan, M. Boonstra, H. Raju, D. B. Goldgof, R. Kasturi, J. S. Garofolo: "Performance Evaluation of Text Detection and Tracking in Video," *IAPR Workshop on Document Analysis Systems*, LNCS 3872, pp. 576-587, Nelson, New Zealand, 2006
- Manohar, V., P. Soundararajan, H. Raju, D.B. Goldgof, R. Kasturi, J.S. Garofolo, "Performance Evaluation of Object Detection and Tracking in Video," *Asian Conference on Computer Vision, ACCV*, LNCS 3852, pp. 151-161, Hyderabad, India, 2006
- Mohanty, P.K., S. Sarkar and R. Kasturi, "Designing Affine Transformations based Face Recognition Algorithms," *IEEE CVPR Workshop on Face Recognition Grand Challenge Experiments*, San Diego, 2005
- Min, J., and R. Kasturi, "Activity Recognition Based on Multiple Motion Trajectories," *Proceedings of the Seventeenth International Conference on Pattern Recognition*, Vol. 4, pp. 199-202, Cambridge, England, 2004
- Park, J.H., X. Ji, H. Zha, and R. Kasturi, "Support Vector Clustering Combined with Spectral Graph Partitioning," *Proceedings of the Seventeenth International Conference on Pattern Recognition*, Vol. 4, pp. 581-584, Cambridge, England, 2004
- Park, J., Z. Zhang, H. Zha and R. Kasturi, "Local Smoothing for Manifold Learning," *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, 2:452-459, Washington, D.C., June 2004
- Min, J. and R. Kasturi, "Extraction and Temporal Segmentation of Multiple Motion Trajectories in Human Motion," *IEEE CVPR Workshop on Detection and Recognition of Events in Video*, Washington, D.C., June 2004
- Park, J., H. Zha, and R. Kasturi, "Spectral Clustering for Robust Motion Segmentation," *The 8th European Conference on Computer Vision - ECCV (4)*, LNCS 3024, pp. 390-401, Prague, May 2004
- Mariano, V.Y. and Kasturi, R, "Detection of text marks on moving vehicles", *Proceedings Seventh International Conference on Document Analysis and Recognition*, Vol.1, pp. 393 - 397, Edinburgh, Scotland, Aug. 2003
- Min, J., J. Park, and R. Kasturi, "Extraction of Multiple Motion Trajectories in Human Motion" *Proceedings of the 13th Scandinavian Conference on Image Analysis, SCIA 2003*, LNCS 2749, pp. 1050-1057, Goteborg, Sweden, July 2003
- Mariano, V., J. Min, J. Park, R. Kasturi, D. Mihalcik, H. Li, D. Doermann, and T. Drayer, "Performance Evaluation of Object Detection Algorithms," *Proceedings of the Sixteenth International Conference on Pattern Recognition*, Vol. III, pp. 965-969, Quebec City, August 2002
- Pande, N., Y. Huang, A. Narasimhamurthy, O.I. Camps, and R. Kasturi, "Performance Characterization of Obstacle Detection Algorithms for Rotorcraft Navigation," *Proceedings SPIE Conference on Enhanced and Synthetic Vision*, Vol. 4713, Orlando, Florida, April 2002
- Crandall, D. and R. Kasturi, "Robust Detection of Stylized Text Events in Digital Video," *Proceedings of the Sixth International Conference on Document Analysis and Recognition*, Seattle, pp. 865-869, September 2001
- Kasturi, R., S. Antani, D.J. Crandall and V.Y. Mariano, "A Framework for Reliable Text Based Indexing of Video," *Proceedings of the Symposium on Document Image Understanding Technology*, April 2001

- Yang, M.T., R. Kasturi, and A. Sivasubramaniam, "An Automatic Scheduler for Real-time Vision Applications," *Proceedings of the International Parallel and Distributed Processing Symposium*, San Francisco, April 2001
- Antani, S., D. Crandall, A. Narasimhamurthy, V.Y. Mariano and R. Kasturi, "Evaluation of Methods for Detection and Localization of Text in Video," *Preproceedings of the IAPR Workshop on Document Analysis Systems*, pp. 507-514, Rio de Janeiro, December 2000
- Yang, M.T., T. Gandhi, R. Kasturi, L. Coraor, O. Camps, and J. McCandless, "Real-time Obstacle Detection System for High Speed Civil Transport Supersonic Aircraft," *IEEE 51<sup>st</sup> National Aerospace and Electronics Conference (NAECON 2000)*, pp. 595-601, Dayton, Ohio, October 2000
- Antani, S., D. Crandall, R. Kasturi. Robust Extraction of Text in Video. *Proceedings of the Fifteenth International Conference on Pattern Recognition (ICPR 2000)*. 1:831-834. Barcelona, Spain. September 2000.
- Gandhi, T., R. Kasturi, S. Antani. Application of Planar Motion Segmentation for Scene Text Extraction. *Proceedings of the Fifteenth International Conference on Pattern Recognition (ICPR 2000)*. 1:445-449. Barcelona, Spain. September 2000.
- Mariano, V. Y., R. Kasturi. Locating Uniform Colored Text in Video Frames. *Proceedings of the Fifteenth International Conference on Pattern Recognition (ICPR 2000)*. 4:539-542. Barcelona, Spain. September 2000.
- Gandhi, T., M. Yang, R. Kasturi, O. Camps, L. Coraor. Detection of Obstacles in the Flight Path of an Aircraft. *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*. 2:304-311. Hilton Head, SC. June 2000.
- Gargi, U., D. Crandall, S. Antani, T. Gandhi, R. Keener, R. Kasturi. A System for Automatic Text Detection in Video. *Proceedings of the International Conference on Document Analysis and Recognition*. pp. 29-32. Bangalore, India, September 1999
- Gargi, U., and R. Kasturi, "Image Database Querying Using a Multi-Scale Localized Color Representation", *Proceedings of the IEEE Workshop on Content-Based Access of Image and Video Libraries*, pp. 28-32, Fort Collins, CO, June 1999
- Gargi, U., S. Antani, R. Kasturi. Text Extraction from Video. *Proceedings of the Symposium on Document Image Understanding Technology (SDIUT99)*. pp. 277-278. Annapolis, MD. April 1999.
- Gargi, U., S. Antani, and R. Kasturi, "Indexing Text Events in Digital Video Databases," *Proceedings of the Fourteenth International Conference on Pattern Recognition*, Brisbane, Australia, pp. 916-918, August 1998
- Tofani, P. and R. Kasturi, "Segmentation of Text from Color Map Images," *Proceedings of the Fourteenth International Conference on Pattern Recognition*, Brisbane, Australia, pp. 945-947, August 1998
- Antani, S., R. Kasturi, and R. Jain, "Pattern Recognition Methods in Image and Video Databases: Past, Present, and Future," invited paper, *Proceedings of the Syntactic, Structural, and Statistical Pattern Recognition Workshops*, Sydney, Australia, Springer-Verlag LNCS Vol. 1451, edited A. Amin and D. Dori, pp. 31-53, August 1998
- Gargi, U., R. Kasturi, and S. Antani, "Performance Characterization and Comparison of Video Indexing Algorithms," *Proceedings of the IEEE Conference on Computer Vision and Pattern Recognition*, Santa Barbara, pp. 559-565, June 1998

- Kasturi, R. and H. Luo, "Research Advances in Graphics Recognition: An Update," in *Advances in Document Image Analysis*, Proceedings of the First Brazilian Symposium (BSDIA '97), edited by N. Murshed and F. F. Bortolozzi, LNCS 1339: 99-110, Curitiba, Brazil, November 1997
- Luo, H., R. Kasturi, J. F. Arias, and A. Chhabra, "Interpretation of Lines in Distributing Frame Drawings," *Proceedings of the Fourth International Conference on Document Analysis and Recognition*, Ulm, Germany, pp. 66-70, August 1997
- Luo, H. and R. Kasturi, "An Improved Directional Morphological Operation for Separation of Characters from Maps/Graphics," *Proceedings of the Second International Workshop on Graphics Recognition*, Nancy, France, pp. 8-15, August 1997 (also in post-proceedings book, *Graphics Recognition*, LNCS, April 1998)
- Kasturi, R., H. Luo, and U. Gargi "Graphics Recognition/Text Segmentation in Video: An Overview of Research at Penn State," *Proceedings of the Symposium on Document Image Understanding Technology*, Anapolis, MD, pp. 173-179, May 1997
- Gandhi, T., S. Devadiga, R. Kasturi, and O. Camps, "Detection of Obstacles on Runway using Ego-motion Compensation and Tracking of Significant Features," *IEEE Workshop on Applications of Computer Vision*, Sarasota, FL, pp. 168-173, December 1996
- Arias, J., R. Kasturi, and A. Chhabra, "Evaluating the Performance of Techniques for Extraction of Primitives from Line Drawings Composed of Horizontal and Vertical Lines," *Proceedings of the IAPR Workshop on Document Analysis Systems*, Malvern, PA, pp. 191-205, October 1996, also in post-proceedings book, *Document Analysis Systems II*, edited by J.J. Hull and S.L. Taylor, Series in Machine Perception and Artificial Intelligence, Volume 29, pp. 341-355, World Scientific
- Gargi, U., R. Kasturi, "An Evaluation of Color Histogram-Based Methods in Video Indexing," *Proceedings of the First International Workshop on Image Databases and Multimedia Search*, Amsterdam, The Netherlands, pp. 75-82, August 1996
- Kosiba, D. and R. Kasturi, "Automatic Invoice Interpretation; Invoice Structure Analysis," *Proceedings of the Thirteenth International Conference on Pattern Recognition*, Vienna, Austria, pp. 721-725, August 1996
- Devaux, P. M., D. B. Lysak, C. P. Lai. and R. Kasturi, "A Complete System for Recovery of 3-D Shapes from Engineering Drawings," *Proceedings of the IEEE Symposium on Computer Vision*, Coral Gables, FL, pp. 145-150, November 1995
- Arias, J., R. Kasturi, and A. Chhabra, "Efficient Techniques for Telephone Company Line Drawing Interpretation," *International Conference on Document Analysis and Recognition*, Montreal, Canada, pp. 795-798, August 1995.
- Devadiga, S. and R. Kasturi, "Evaluation of Video Sequence Indexing and Hierarchical Video Indexing," *Storage and Retrieval for Image and Video Databases, Proc. SPIE, Vol. 2420*, San Jose, pp. 144-151, February 1995.
- Devadiga, S. and R. Kasturi, "A Semiautomatic Video Database System," *Storage and Retrieval for Image and Video Databases, Proc. SPIE, Vol. 2420*, San Jose, pp. 262-267, February 1995.
- Tang, Y.L. and R. Kasturi, "Runway Detection in an Image Sequence," *Image and Video Processing III, Proc. SPIE, Vol. 2421*, San Jose, pp. 181-190, February 1995.
- Arias, J.F., A. Prasad, R. Kasturi, and A. Chhabra, "Interpretation of Telephone Company Central Office Drawings," *Twelfth International Conference on Pattern Recognition, Vol. 2*, Jerusalem, pp. 310-314, October 1994

- Kosiba, D., T. Gandhi, P. Devaux, S. Balasubramanian, and R. Kasturi, "An Automatic Jigsaw Puzzle Solver," *Twelfth International Conference on Pattern Recognition, Vol. 1*, Jerusalem, pp. 616-618, October 1994
- Arias, J.F., S. Balasubramanian, A. Prasad, R. Kasturi, and A. Chhabra, "Information Extraction from Telephone Company Drawings," *IEEE Conference on Computer Vision and Pattern Recognition*, Seattle, pp. 729-732, June 1994
- Arias, J. and R. Kasturi., "Recognition of Graphical Objects for Intelligent Interpretation of Line Drawings," invited paper, in *Aspects of Visual Form Processing*, (Proceedings of Workshop on Visual Form, Capri, Italy) eds: C. Arcelli, L.P. Cordella, and G. Sannitti di Baja, World Scientific, Singapore, pp. 11-31, June 1994
- Tang, Y-L. and R. Kasturi, "Accurate Estimation of Object Location in an Image Sequence Using Helicopter Flight Data," *NASA Goddard Conference on Space Applications of Artificial Intelligence*, pp. 147-157, May 1994
- Lai, C.P. and R. Kasturi, "Extraction of Object Lines in Engineering Drawings," *Document Recognition, Proc. SPIE, Vol. 2181*, pp. 172-181, San Jose, February 1994
- Balasubramanian, S. and R. Kasturi, "Information Extraction from Tabular Drawings," *Document Recognition, Proc. SPIE, Vol. 2181*, pp. 152-163, San Jose, February 1994
- Tang, Y.L., S. Devadiga, R. Kasturi, and R.L. Harris, Sr., "Model-based Approach for Detection of Objects in Low-Resolution Passive Millimeter Wave Images," *Image and Video Processing II, Proc. SPIE, Vol. 2182*, pp. 320-330, San Jose, February 1994
- Lai, C.P. and R. Kasturi, "Detection of Dimension Sets in Engineering Drawings," invited paper, *International Conference on Document Analysis and Recognition*, Tsukuba Science City, Japan, pp. 606-613, October 1993
- Arias, J., S. Chandran, C.P. Lai, R. Kasturi, and A. Chhabra, "Interpretation of Telephone System Manhole Drawings," *International Conference on Document Analysis and Recognition*, Tsukuba Science City, Japan, pp. 516-519, October 1993
- Chandran, S. and R. Kasturi, "Recognition of Structure in Table-form Documents," *International Conference on Document Analysis and Recognition*, Tsukuba Science City, Japan, pp. 365-368, October 1993
- Chhabra, A.K., S. Chandran, and R. Kasturi, "Table Structure Interpretation and Neural Network Based Text Recognition for Conversion of Telephone Company Tabular Drawings," *International Workshop on Applications of Neural Networks to Telecommunications*, Princeton, Lawrence Erlbaum Associates, Publishers, Hillsdale, New Jersey, pp. 92-98, October 1993
- Kim, T.O, S.R.T. Kumara, and R. Kasturi, "Visual Defects Inspection and Classification Using a Multilayer Perceptron," *Artificial Neural Networks in Engineering*, pp. 1993
- Lysak, D.B. and R. Kasturi, "Interpreting the Views in an Engineering Drawing," *IEEE Conference on Computer Vision and Pattern Recognition*, New York City, pp. 598-599, June 1993
- Tang, T.L, S. Devadiga, R. Kasturi, and R.L. Harris, Sr., "A Knowledge-based Approach for Detection of Objects in Low-Resolution Passive Millimeter Wave Images," *NASA Workshop on Augmented Visual Displays*, NASA Ames Research Center, pp. 313-328, March 1993
- Kumar, S.U., and R. Kasturi, "Text Data Extraction from Microfilm Images of Punched Cards," *Eleventh International Conference on Pattern Recognition*, The Hague, Netherlands, pp. 230-233, September 1992
- Lai, C.P. and R. Kasturi, "Recognition of Characteristic Symbols in Engineering Drawings," *Character Recognition and Digitizer Technologies, Proc. SPIE, 1661*:83-89, San Jose, CA, February 1992

- Lysak, D.B. Jr. and R. Kasturi, "Interpretation of Engineering Drawings of Polyhedral and Non-polyhedral Objects," *First International Conference on Document Analysis and Recognition*, St. Malo, France, pp. 79-87, September 1991
- Lai, C.P. and R. Kasturi, "Detection of Dashed Lines in Engineering Drawings and Maps." *First International Conference on Document Analysis and Recognition*, St. Malo, France, pp. 507-515, September 1991
- Chennubhotla C. and R. Kasturi, "Pose Clustering on Constraints for Object Recognition," *IEEE Conference on Computer Vision and Pattern Recognition*, Maui, Hawaii, pp. 16-21, June 1991
- Kasturi, R., S. Siva and L. O'Gorman, "Techniques for Line Drawing Interpretation: An Overview," (Invited Paper), *IAPR International Workshop on Machine Vision Applications*, Tokyo, Japan, pp. 151-160, November 1990
- Amamoto, D.Y., R. Kasturi and A. Mamourian, "Tissue-type Discrimination in Magnetic Resonance Images," *Tenth International Conference on Pattern Recognition*, Atlantic City, NJ, pp. 603-607, June 1990
- Lysak, D.B. Jr. and R. Kasturi, "Interpretation of Line Drawings with Multiple Views," *Tenth International Conference on Pattern Recognition*, Atlantic City, NJ, pp. 220-222, June 1990
- Kasturi, R., R. Raman, C. Chennubhotla, L. O'Gorman, "Document Image Analysis: An Overview of Techniques for Graphics Recognition," *Preproceedings of the IAPR Workshop on Syntactic & Structural Pattern Recognition*, Murray Hill, New Jersey, pp. 192-230, June 1990; also in the post-proceedings book, *Structured Document Image Analysis*, eds: H.S. Baird, H. Bunke, and K. Yamamoto, Springer-Verlag, Heidelberg, pp. 285-324, 1992
- Kasturi, R., S.T. Bow, J. Gattiker, J. Shah, W. El-Masri, U. Mokate, and S. Honnenahalli, "A System for Recognition and Description of Graphics," *Ninth International Conference on Pattern Recognition*, pp. 255-259, Rome, Italy, Nov. 1988
- Shih, C-C. and R. Kasturi, "Generation of a Line-Description File for Graphics Recognition," *Applications of Artificial Intelligence, Proc. SPIE*, 937:568-575 (1988)
- Amlani, M.L. and R. Kasturi, "A Query Processor for Information Extraction from Images of Paper-based Maps," *Conference on User-Oriented Content-Based Text and Image Handling Conference*, MIT, pp. 991-1000, March 1988
- Alemanly, J. and R. Kasturi, "A Computer Vision System for Interpretation of Paper-based Maps," *Applications of Digital Image Processing, Proc. SPIE*, 829:125-137, 1987
- Fletcher, L.A. and R. Kasturi, "Segmentation of Binary Images into Text Strings and Graphics," *Applications of Artificial Intelligence, Proc. SPIE*, 786:533-540, 1987
- Kasturi, R., J.Alemanly, and M.L.Amlani, "A Query Processing System for Paper-based Maps," *Eighth International Conference on Pattern Recognition*, Paris, France, pp. 874-876, 1986
- Kasturi, R., C-C. Shih, and L.A.Fletcher, "An Approach for Automatic Recognition of Graphics," *Eighth International Conference on Pattern Recognition*, Paris, France, pp. 877-879, 1986
- McGlone, J.S., L.S. Hibbard, R.A. Hawkins, and R. Kasturi, "A Computerized System for Measuring Cerebral Metabolism," *Digital Image Processing, Proc. SPIE*, 697:293-300, 1986
- Amin, T.J. and R. Kasturi, "Recognition of Lines and Symbols in Maps," *Hybrid Image Processing, Proc. SPIE*, 638:117-122, 1986
- Kasturi, R. and J.F. Walkup, "Nonlinear Image Restoration," (Invited Paper), *Digital Image Processing: Critical Review of Technology, Proc. SPIE*, 528:43-61, 1985
- Morean, O.A. and R. Kasturi, "Symbol Identification in Geographical Maps," *Seventh International Conference on Pattern Recognition*, Montreal, Canada, 966-967, 1984

- Kasturi, R., J.F. Walkup, and T.F. Krile, "Maximum a posteriori Image Estimation in Signal-dependent Noise," *Seventh International Conference on Pattern Recognition*, Montreal, Canada, 148-150, 1984
- Morean, O.A. and R. Kasturi, "Application of Pattern Recognition Techniques to Process Cartographic Data," *Applications of Artificial Intelligence, Proc. SPIE*, 485:211-213, 1984
- Kasturi, R., J.F. Walkup, and T.F. Krile, "Image Restoration by Transformation of Signal-dependent Noise to Signal-independent Noise," *IEEE Conference on Computer Vision and Pattern Recognition*, Arlington, VA, 410-415, 1983
- Kasturi, R., J.F. Walkup, and T.F. Krile, "Signal Recovery from Signal-dependent Noise," *Applications of Digital Image Processing, Proc. SPIE*, 359:47-52, 1982
- Kasturi, R., J.F. Walkup, and T.F. Krile, "Space-Variant 2-D Processing using a Sampled Input/Sampled Transfer Function Approach," *International Optical Computing Conference, Proc. SPIE*, 232:182-190, 1980

### **Other Papers and Presentations:**

- Kasturi, R., "Naanuu Naataka Nodidhe", a satire in Kannada language about the 2002 World Kannada Convention, Sudha literary magazine, Bangalore, India, Nov. 14, 2002 issue.
- Kasturi, R., "Computer Vision and Image Analysis Research: An Overview," presentation at the 8th Iberoamerican Congress on Pattern Recognition, Havana, Cuba, November 2003
- Kasturi, R., "Computer Vision and Image Analysis Research at the Pennsylvania State University: An Overview," presentation at the Sixth International Conference on Pattern Recognition and Image Analysis, Velikiy Novgorod, Russian Federation, October 2002
- Mariano, V. and R. Kasturi, "Matching Text Objects in Video," *CD Proceedings of the Technical Sketches Program at CVPR*, Kauai, Hawaii, December 2001
- Yang, M.T., R. Kasturi, and A. Sivasubramaniam, "An Automatic Scheduler for Real-time Vision Applications," Poster Presentation at the *High Performance Computing Conference*, Bangalore, India, December 2000
- Muralidhar, N., R. Kasturi, O. Camps. Collection of Training Data for Optical Character Recognition of Printed Kannada Characters. *Open Research Forum at the Fifth International Conference on Document Analysis and Recognition*, Bangalore, India, September 1999.
- Moscariello, S., R. Kasturi, and O. Camps, "Image Processing and Computer Vision Instruction at Penn State University Using JAVA Image Processing," *IEEE Workshop on Undergraduate Education and Image Computation*, San Juan, Puerto Rico, June 1997
- Kasturi, R., "Interpretation of Graphical Contents in Document Images: An Overview of Techniques," invited paper, *Vision Interface '94*, Banff, Canada, May 1994
- Kasturi, R., "Intelligent Interpretation of Line Drawings," *Symposium on Advanced Information Processing and Analysis*, Washington, D.C., March 1994
- Kasturi, R. and R.L. Harris, "Analysis of Simulated Image Sequences from Sensors for Restricted Visibility Operations," presented at the *Tenth IEEE/AIAA Digital Avionics Systems Conference*, Los Angeles, October 1991
- Kasturi, R., J.R. Gattiker, and J. Shah, "Mixed Text/Graphics Images: Automated Text Separation and Graphics Representation," *Annual Meeting of the Optical Society of America*, Rochester, N.Y., 1987

- Kasturi, R., "An Easy to Use Text Processor for Kannada," *Journal of the Society for Advancement of Indian Languages*, 1(2):4-7, 1986
- Tutwiler, R.L. and R. Kasturi, "Adaptive Restoration of Atmospherically Degraded Images," *Annual Meeting of the Optical Society of America*, Washington, D.C., 1985
- Kasturi, R., J.F. Walkup, and T.F. Krile, "Space-Variant Processing Techniques - A Comparison," *Annual Meeting of the Optical Society of America, J. Opt. Soc. Amer.*, 70:1590, 1980

## Theses and Dissertations Supervised:

- J. Candamo, *Video Sequence Analysis* (topic), Ph.D. (In progress), (coadvisor: D. Goldgof)
- J. Zhang, *Graphical Object Detection in Video* (topic), Ph.D. (In progress)
- H. Vajaria, *Diarization, Localization and Identification of Participants in Meeting Archives*, Ph.D., 2008, (coadvisor: S. Sarkar)
- P.K. Mohanty, *Learning from Biometric Distances: Performance and Security Related issues in Face Recognition System*, Ph.D., 2007, (coadvisor: S. Sarkar),
- V. Kamath, Use of random subspace analysis on gene expression profiles to enhance the accuracy of survival prediction for colon cancer patients, M.S., 2005
- J.H. Park, *Manifold Learning in Computer Vision*, Ph.D., 2005 (coadvisor: H. Zha)
- J. Min, *Human Activity Recognition Using Motion Trajectories*, Ph.D., 2005 (coadvisor: O. Camps)
- V. Mariano, *Video Object Detection and Matching*, Ph.D., 2003
- S.Antani, *Video Content Characterization via Robust Recognition of Scene and Caption Text*, Ph.D., 2001
- D. Crandall, *Detection of Stylized Text in Video*, M.S. CSE and BS (Honors), May 2001
- M.Yang, *An Automatic Scheduler for Real-time Vision Applications*, Ph.D., Dec. 2000
- T.Gandhi, *Image Sequence Analysis for Object Detection and Segmentation*, Ph.D., May 2000
- U.Gargi, *Visual Content Characterization and Similarity Retrieval of Images and Video*, Ph.D., Dec. 1999
- P.Tofani, *Segmentation of Text from Color Map Images*, MS, CSE, May 1998
- S.Devadiga, *Detection of Obstacles in Monocular Image Sequences*, Ph.D., August 1997
- S.Natarajan, *A Hierarchical Scheme for Invoice Classification*, MS, CSE, August 1997
- J.Arias, *Efficient Techniques for Line Drawing Interpretation and Their Application to Telephone Company Drawings*, PhD, August 1995
- A.Prasad, *A System for the Intelligent Interpretation of Text from Telephone Company Drawings*, MSCmpE, August 1995
- P.Devaux, *An Experimental Verification of a System for the Automated Interpretation of Engineering Drawings*, MSEE, May 1995
- Y.L.Tang, *An Airborne Vision System for Runway Recognition and Obstacle Detection*, Ph.D., August 1994
- S.Balasubramanian, *Information Extraction From Tabular Drawings*, MSEE, May 1994
- C.P.Lai, *Knowledge-based Understanding of Engineering Drawings*, Ph.D., June 1993
- S.Chandran, *Structural Recognition of Tabulated Data*, MSCmpE, 1993
- S.U.Kumar, *Text Data Extraction from Microfilm Images of Punched Cards*, MSCmpE, 1992
- S.C.Chennubhotla, *Pose Clustering on Constraints for Object Recognition*, MSEE, 1991
- D.B.Lysak, Jr., *Interpretation of Engineering Drawings of Polyhedral and Non-polyhedral Objects from Orthographic Projections*, Ph.D., 1991
- R.Raman, *Beautification of Hand-drawn Line Drawings*, MSCmpE, 1990
- W.C.Feng, *A Learn-By-Example Natural Language Processor Based on Case Frame Instantiation*, MSCmpE, 1990.

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