

Contact Information

Yun Zhai

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Education Background

- **University of Central Florida**, Orlando, Florida.
Degree: Doctor of Philosophy in Computer Science.
School of Electrical Engineering and Computer Science.
Graduation Date: August 2006.
- **Bethune-Cookman College**, Daytona Beach, Florida.
Degree: Bachelor of Science in Computer Science.
Department of Computer Science.
Graduation Date: April 2001.
Honor: Summa cum Laude.

Professional Experiences

Senior Digital Video Research & Development Engineer, December 2007 – present

IBM Research and Global Technology Services
Supervisor: Stephen Russo, Arun Hampapur
IBM Smart Surveillance Solution.

Post-Doc Researcher, September 2006 – August 2007

Exploratory Computer Vision Group
IBM Thomas J. Watson Research Center
Supervisor: Dr. Arun Hampapur (arunh@us.ibm.com)
Tracking analysis in surveillance domain.

Graduate Research Assistant, August 2001 – August 2006

School of Electrical Engineering and Computer Science
University of Central Florida, Advisor: Dr. Mubarak Shah (shah@cs.ucf.edu)
Participated in Video Analysis and Content Extraction (VACE) Project.
Participated in Nighttime Surveillance Project.
Participated in TREC Video Retrieval Evaluation Forum (TRECVID).
Participated in Railroad Grade Crossing Monitoring Project.
Participated in Target Detection in Forward Looking Infrared Imagery Project.

Graduate Teaching Assistant, January 2002 – May 2004

School of Electrical Engineering and Computer Science.

University of Central Florida, Orlando, Florida.

Teaching COT 3100 – Introduction to Discrete Structures.

Teaching COP 3503 – Computer Science II.

Responsible for the recitation sessions of class (25~30 students).

Responsible for lecturing course curriculum materials.

Course contents include logic, sets, functions, relations, Boolean algebra, finite-state machines, object-oriented design, data structures, traversal techniques and program correctness

Publications

Book Chapter and Journal Publications:

1. Ying-Li Tian, Arun Hampapur, Lisa Brown, Rogerio Feris, Max Lu, Andrew Senior, Chiao-fe Shu and **Yun Zhai**.
Event Detection, Query, and Retrieval for Video Surveillance,
In book Artificial Intelligence for Maximizing Content Based Image Retrieval,
Edited by Zonmin Ma, published by Idea Group Inc., 2008.
2. Arslan Basharat, **Yun Zhai** and Mubarak Shah,
Content-Based Video Matching Using Spatiotemporal Volumes,
Computer Vision and Image Understanding.
Volume 100, Issue 3, Pages 360-377, June, 2008.
3. **Yun Zhai** and Mubarak Shah,
Video Scene Segmentation Using Markov Chain Monte Carlo,
IEEE Transactions on Multimedia, August 2006.
4. **Yun Zhai**, Zeeshan Rasheed and Mubarak Shah,
Semantic Classification of Movie Scenes Using Finite State Machines,
IEE Proceedings on Video, Image and Signal Processing (VIS),
Volume 152, Number 6, Pages 896-901, 2005.
5. **Yun Zhai** and Mubarak Shah
Detection of Semantic Linkage in News Videos, under review.
6. **Yun Zhai** and Mubarak Shah,
Spatiotemporal Attention Detection, under review.

Peer-Reviewed Conference Publications:

7. Rogerio Feris, Ying-li Tian, **Yun Zhai** and Arun Hampapur,
Facial Image Analysis Using Local Feature Adaptation Prior to Learning,
IEEE Int'l Conf. on Automatic Face and Gesture Recognition, Amsterdam, 2008.
8. Longbin Chen, Rogerio Feris, **Yun Zhai**, Lisa Brown and Arun Hampapur,
An Integrated System for Moving Object Classification in Surveillance Videos,
IEEE Int'l Conf. on Advanced Video and Sensor-Based Surveillance, 2008.
9. A.W. Senior, L. Brown, A. Hampapur, C-F. Shu, **Y. Zhai**, R.S. Feris, Y-L. Tian,
S. Borger and C. Carlson,

- Video Analytics in Retail*,
IEEE Int'l Conf on Advanced Video and Sensor-Based Surveillance, 2007.
10. A. Hampapur, L. Brown, R.S. Feris, A.W. Senior, C-F. Shu, Y-L. Tian, **Y. Zhai** and M. Lu,
Searching Surveillance Videos,
IEEE Int'l Conf on Advanced Video and Sensor-Based Surveillance, 2007.
 11. A.W. Senior, L. Brown, C-F. Shu, Y-L. Tian, **Y. Zhai** and A. Hampapur,
Visual Person Searches for Retail Loss Detection,
Int'l Conf. on Computer Vision Systems, 2007.
 12. **Yun Zhai** and Mubarak Shah (full-length research paper, 17% acceptance rate)
Visual Attention Detection in Video Sequences Using Spatiotemporal Cues,
ACM International Conference on Multimedia, Santa Barbara, 2006.
 13. **Yun Zhai**, Jingen Liu and Mubarak Shah
Automatic Query Expansion in News Video Retrieval,
IEEE International Conference on Multimedia and Expo, Toronto, Canada, 2006.
 14. **Yun Zhai** and Mubarak Shah, (full-length research paper, 16% acceptance rate)
Tracking News Stories Across Different Sources,
ACM International Conference on Multimedia, Full Paper, Singapore, 2005.
 15. **Yun Zhai** and Mubarak Shah, (short paper, 29% acceptance rate)
Determining Structure in Continuously Recorded Videos,
ACM International Conference on Multimedia, Singapore, 2005.
 16. **Yun Zhai** and Mubarak Shah, (16% acceptance rate)
A General Framework for Temporal Video Scene Segmentation,
IEEE International Conference on Computer Vision, Beijing, China, 2005.
 17. **Yun Zhai**, Alper Yilmaz and Mubarak Shah, (oral presentation, 20% accept. rate)
Story Segmentation in News Videos Using Visual and Text Cues,
International Conference on Image and Video Retrieval, Singapore, 2005.
 18. **Yun Zhai** and Mubarak Shah, (oral presentation, 20% acceptance rate)
Automatic Segmentation of Home Videos,
IEEE International Conference on Multimedia and Expo, Amsterdam, 2005.
 19. **Yun Zhai** and Mubarak Shah,
A Multi-Level Framework for Video Shot Structuring,
International Conference on Image Analysis and Recognition, Toronto, 2005.
 20. **Yun Zhai**, Zeeshan Rasheed and Mubarak Shah,
Conversation Detection in Feature Films Using Finite State Machines,
International Conference on Pattern Recognition, Cambridge, U.K., 2004.
 21. **Yun Zhai**, Zeeshan Rasheed and Mubarak Shah (oral presentation)
A Framework of Semantic Classification of Scenes Using Finite State Machines,
International Conference on Image and Video Retrieval, Dublin, Ireland, 2004.
 22. Yaser Sheikh, **Yun Zhai** and Mubarak Shah
An Accumulative Framework for the Alignment of an Image Sequence,
Asian Conference on Computer Vision, Jeju, South Korea, 2004.

Workshop/Forum/Symposium Publications:

23. Jingen Liu, **Yun Zhai**, Arslan Basharat, Bilal Orhan, Saad Khan, Humera Noor, Phillip Berkowitz and Mubarak Shah,

- University of Central Florida at TRECVID 2006,*
TREC Video Retrieval Evaluation Forum, Gaithersburg, 2006.
24. **Yun Zhai**, Phillip Berkowitz, Andrew Miller, Khurram Shafique, Aniket Vartak, Brandyn White and Mubarak Shah,
Multiple Vehicle Tracking in Surveillance Videos,
CLEAR Evaluation Campaign and Workshop, Southampton, 2006.
 25. Jingen Liu, **Yun Zhai** and Mubarak Shah, (oral presentation)
PEGASUS: An Information Mining System for TV News Videos,
SPIE Defense and Security Symposium, Orlando, 2006.
 26. **Yun Zhai**, Jingen Liu, Xiaochun Cao, Arslan Basharat, Asaad Hakeem, Saad Ali and Mubarak Shah,
Video Understanding and Content-Based Retrieval,
TREC Video Retrieval Evaluation Forum, Gaithersburg, 2005.
 27. **Yun Zhai**, *et al.*, (oral presentation on news story segmentation)
University of Central Florida at TRECVID 2004,
TREC Video Retrieval Evaluation Forum, Gaithersburg, 2004.
 28. Yaser Sheikh, Khurram Shafique, **Yun Zhai** and Mubarak Shah,
Visual Monitoring of Railroad Grade Crossings,
SPIE Defense and Security Symposium, Orlando, 2004.
 29. **Yun Zhai**, Zeeshan Rasheed and Mubarak Shah,
University of Central Florida at TRECVID 2003,
TREC Video Retrieval Evaluation Forum, Gaithersburg, 2003.

Professional Skills

Programming Languages	C++, MatLab, Java, Java Script
Operating Systems	Windows, Linux
Editing Software	Microsoft Office Suite (Word, Excel, PowerPoint)
Image/Video Processing	Adobe Premiere, Microsoft Movie Maker
Natural Languages	Chinese (native), English (fluent).

Professional Community Services

Direct Reviews

IEEE Signal Processing Letters, International Journal of Pattern Recognition and Artificial Intelligence, Journal on Computer Vision and Image Understanding, IEEE Transactions on Circuits and Systems for Video Technology, IEEE Transactions on Multimedia, Journal on Vision and Computer Interaction, International Journal on Image and Graphics.

International Conference on Image Processing, IEEE International Conference on Advanced Video and Sensor-Based Surveillance, IEEE Industrial Electronics Society, IEEE International Symposium on Industrial Electronics, IBM Watson Research Ph.D. Fellowship Selection Committee.

External Reviews

ACM Transactions on Multimedia Computing, Communications and Processing.
IEEE Transactions on Circuits and Systems for Video Technology.
IEEE International Conference on Computer Vision.
IEEE International Conference on Computer Vision and Pattern Recognition.
International Conference on Pattern Recognition.
European Conference on Computer Vision.

Honors and Awards

ACM Multimedia Conference 2006, Student Travel Grant Recipient	2006
Inclusion in the Marquis Who's Who Publications,	2006
Graduate Research Fellowship Recipient, UCF,	2006
Summa cum Laude, Bachelor Graduation,	2001
Computer Science Honor Society Member, Upsilon Phi Epsilon	2001-2006
All American Scholar Award,	2001
Presidential Scholarship Recipient, B-CC,	1997-2001
FGAMP Fellowship Recipient, B-CC Chapter,	1997-2001