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## Research Interests

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Computer vision, Pattern recognition, Multimedia data mining.  
Specifically, object and face recognition, semantic analysis and retrieval of large multimedia collections, historical document understanding, analysis of human and animal behaviour.

## Education

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### Ph.D. (1998-2003)

Middle East Technical University, Dep. of Computer Engineering, Ankara, Turkey

- ◇ *Thesis title:* Translating images to words : A novel approach for object recognition
- ◇ *Supervisor:* Prof. Fatoş Yarman-Vural
- ◇ *Co-supervisor:* Prof. David Forsyth (University of Illinois at Urbana-Champaign)

### M.S. (1996-1998)

Middle East Technical University, Dep. of Computer Engineering, Ankara, Turkey

- ◇ *Thesis title:* Form Document Identification Based On Hierarchical Tree Representation
- ◇ *Supervisor:* Prof. Volkan Atalay

### B.S. (1992-1996)

Middle East Technical University, Dep. of Computer Engineering, Ankara, Turkey

- ◇ *Graduation Project:* Recognition of Cadastre Forms Using Form Description Languages
- ◇ *Supervisors:* Prof. Volkan Atalay and Prof. Halit Oğuztüzün

## Experience

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**Dept. of Computer Engineering, Bilkent University,**  
*Assistant Professor*

Ankara, Turkey  
April 2004 - present

- ◇ Co-founder of RETINA Vision and Learning research lab. (Web: <http://retina.cs.bilkent.edu.tr/>)
- ◇ Proposed and taught CS 554 (Computer Vision) course. Other courses taught: CS 461 (Artificial Intelligence), CS 315 (Programming Languages), CS 476 (Automata Theory and Formal Languages), CS 111 (Introduction to Computing).
- ◇ (Co-)Principal investigator of three research projects funded by TÜBİTAK.
- ◇ Involved in two projects supported by European Commission
- ◇ (Co-)Supervised three Ph.D. students, 13 M.Sc. students and 11 senior project groups.

**Johns Hopkins University, Center for Language and Speech**  
*Senior Researcher*

Baltimore, MD, USA  
(July 2004 - August 2004)

- ◇ Worked in Joint Visual Text Modeling Team

**Carnegie Mellon University, Computer Science Department**  
*Postdoctoral Researcher - Informedia Project*

Pittsburgh, PA, USA  
(March 2003 - March 2004)

- ◇ Worked for the Informedia Digital Video Understanding Project which integrates speech, image and natural language understanding to automatically transcribe, segment and index video for intelligent search and image retrieval.
- ◇ Involved in *NIST TRECVID 2003* competition which aims benchmarking content-based video retrieval systems.
- ◇ Involved in writing proposals for VACE (video analysis and content extraction for defense intelligence), AQUAINT (question answering from errorful multimedia streams) and LifeLog (capturing and analyzing personal experiences) projects.

**University of California at Berkeley, Computer Science Division**  
*Visiting Scholar - Supervisor : Prof. David Forsyth*

Berkeley, CA, USA  
(February 2001 - May 2002)

- ◇ Joined to Computer Vision Group and Digital Library Project.
- ◇ Proposed a novel approach to object recognition on the very large scale using the joint statistics of text and image regions. Statistical machine translation ideas are applied to multimedia data sets to translate image regions to words.
- ◇ Built a system for browsing large image collections, more specifically the large collection of images in Fine Art Museums of San Francisco.

**Middle East Technical University, Dep. of Computer Engineering**  
*Research Assistant*

Ankara, Turkey  
(September 1996 - March 2003)

- ◇ Member of the Image Processing and Pattern Recognition Group.
- ◇ Proposed multi-level segmentation and representation for content based image retrieval.
- ◇ Worked on form document processing and retrieval.

**University of Rochester**  
*Visiting Researcher*

Rochester, NY, USA  
(July 1999)

- ◇ Joint NSF-TUBITAK project with Prof. Murat Tekalp and Prof. Fatoş Yarman-Vural.
- ◇ Worked on object based image retrieval.

## Academic Activities

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- ◇ Publicity co-chair in 20th International Conference on Pattern Recognition (ICPR 2010).
- ◇ Area Chair for 24th IEEE Conference on Computer Vision and Pattern Recognition (CVPR 2011).
- ◇ Vice Chair for the IAPR Technical Committee 12, June 2009-August 2010
- ◇ Program Committee member for
  - International Conference on Computer Vision (ICCV) 2005, 2007, 2009
  - IEEE International Conference on Computer Vision and Pattern Recognition (CVPR) 2004-2006, 2008-2010
  - European Conference on Computer Vision (ECCV) 2006, 2008, 2010
  - International Conference on Pattern Recognition (ICPR) 2008, 2010
  - ACM International Conference on Image and Video Retrieval (CIVR) 2007-2010
  - ACM SIGMM International Workshop on Multimedia Information Retrieval (MIR) 2006, 2007, 2010
  - International Workshop on Content Based Multimedia Indexing (CBMI) 2010
  - International Multimedia Modeling Conference (MMM) 2010
  - International Symposium on Computer and Information Sciences (ISCIS), 2007, 2010
  - International Conference on Machine Learning (ICML) 2009
  - Workshop on Cross-Media Information Access and Mining (CIAM), in conjunction with IJCAI, 2009
  - The Joint VCL-VISU workshop, in conjunction with CVPR 2009
  - European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD) 2008
  - Workshop on Multimedia Data Mining(MDM), in conjunction with KDD, 2008
  - International Conference on Semantic and Digital Media Technologies (SAMT) 2008
  - International Workshop on Multimodal Information Retrieval, in conjunction with IJCAI 2007
  - International RIAO Conference, 2007
- ◇ Reviewer for IEEE Transactions on Pattern Analysis and Machine Intelligence, International Journal of Computer Vision, IEEE Transactions on Multimedia, IEEE Multimedia, IEEE Transactions on Circuits and Systems for Video Technology, Pattern Recognition Letters, Signal Processing, Machine Vision and Applications Journal, International Journal of Pattern Recognition and Artificial Intelligence, Signal Processing: Image Communications, Journal of Visual Communication and Image Representation, Computational Intelligence, Multimedia Tools and Applications, Multimedia Systems, IEEE Transactions on Computational Intelligence and AI in Games, EURASIP Journal on Image and Video Processing, Turkish Journal of Electrical Engineering and Computer Sciences.
- ◇ Reviewer for ISCIS 2008, 3DTV-Con 2008, EUSIPCO 2005, ISCIS 2004, ICAPR 2003, ICIP 2002, CVPR 2001.
- ◇ Reviewer both for project proposals submitted to and projects that are being supported by European Commission Framework Programs.
- ◇ Reviewer both for project proposals submitted to and for projects that are being supported by TÜBİTAK (Scientific and Technical Research Council of Turkey).

## Projects

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- ◇ **Visual and Textual Analysis and Retrieval of Ottoman Documents:** Principal Investigator. Funded by TÜBİTAK (Turkish Scientific and Technical Council) as a 1001 research project (No: 109E006). Funding: 191,000 YTL ( 122,000 USD). Duration: September 2009 - September 2012.
- ◇ **Multimedia data mining : Integration of multi-modal data for a better retrieval and analysis:** Principal Investigator. Career project awarded by TÜBİTAK (Turkish Scientific and Technical Council) (No: 104E065). Funding: 157,000 YTL ( 100,000 USD). Duration: April 2005 - April 2010.
- ◇ **Semantic Multimodal Analysis of Digital Media:** Co-Principal Investigator. European Commission COST 292 action. Locally it is funded by TÜBİTAK (Turkish Scientific and Technical Council) (No: 104E077). Funding: 102,060 YTL ( 65,000 USD). Duration: October 2004 - October 2008.
- ◇ **MUSCLE - Multimedia Understanding Through Semantics, Computation and Learning :** Researcher. European Commission FP6 Network of Excellence project. Duration: 2004 - 2008.
- ◇ **IST-TURKEY: New Information Society Technologies for Turkey :** Researcher. Funded by TÜBİTAK (Turkish Scientific and Technical Council) as a 1001 research project (No: 105E065). Duration: December 2005 - December 2008.
- ◇ **E-DEVLET Icin Bilgisayar Destekli Gorsel Dokumantasyon, Arsiv ve Yonetim Sistemi Gerceklestirilmesi (in Turkish):** Researcher. Funded by Turkish State Planning Organization. Duration: 2004 - December 2005.

## Honors, Awards and Achievements

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- ◇ Received the rank of Associate Professor from the Inter-University Council (UAK) in April 2010.
- ◇ TÜBİTAK Career Award, 2005
- ◇ Best paper in Cognitive Vision award in European Conference on Computer Vision (ECCV 2002).
- ◇ TÜBİTAK NATO-PC (A-2) fellowship (February 2001 - July 2001)
- ◇ Graduated with the top score from High School.

## Invited Talks

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- ◇ Object Recognition as Machine Translation: Learning a Lexicon for a Fixed Image Vocabulary, Microsoft Research, Cambridge, October 7, 2002.
- ◇ "Translating Images to Words: A Novel Approach for Object Recognition", Carnegie Mellon University, Pittsburgh, USA, March 2003.
- ◇ "Linking Visual Features with Text for Multimedia Data Mining", IBM, NY, USA, March 2004.
- ◇ "Recognition as machine Translation: Labeling Objects and Faces Using large Image and Video Collections", International Object Recognition Workshop, Sicily, Italy, October 2004.

## Thesis supervised

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- ◇ Nazli Ikizler, "Understanding human motion: Recognition and retrieval of human activities", Ph.D. thesis, Bilkent University, 2008 (Co-supervisor: Prof. David Forsyth) . Nazli is now a faculty member in Hacettepe University after working as a post-doctoral fellow at Boston University, USA with Prof. Stan Sclaroff.
- ◇ Zeynep Yucel, "Computer Vision based behavior analysis", Ph.D. thesis, Bilkent University, 2009 (Co-supervisor: Prof. Bulent Ozguler). She is now working as a post-doctoral fellow ATR IRC, Japan.
- ◇ Selen Pehlivan, "A new pose descriptor for multi-camera action recognition using circular features". Selen is continuing to work towards her Ph.D. with me. She is now a visiting scholar at University of Illinois at Urbana-Champaign under the supervision of Prof. David Forsyth.
- ◇ Derya Ozkan, "A graph based approach for finding people in news", M.Sc. thesis, Bilkent University, 2007. Derya is now pursuing her PhD at University of Southern California, USA.
- ◇ Esra Ataer, "A new representation for matching words", M.Sc. thesis, Bilkent University, 2007. Esra is now pursuing her PhD at Northeastern University, USA.
- ◇ Tolga Can, "Detection and Tracking of Repeated Video Sequences", M.Sc. thesis, Bilkent University, 2007.
- ◇ Kardelen Hatun, "Pose Sentences: A New Representation for Understanding Human Actions", M.Sc. thesis, Bilkent University, 2008. Kardelen is now pursuing her PhD at University of Twente, The Netherlands.
- ◇ Selcuk Sandikci, "Vision based behaviour recognition of laboratory animals for drug analysis and testing", M.Sc. thesis, Bilkent University, 2009 (Co-supervisor: Prof. Bulent Ozguler). Selcuk is now pursuing his PhD at Technische Universiteit Eindhoven, The Netherlands.
- ◇ Ethem Fatih Can, "A line based representation for matching words", M.Sc. thesis, Bilkent University, 2009. He is now pursuing his Ph.D. study at University of Massachusetts Amherst, USA.
- ◇ Mehmet Can Kurt, "Recognition of actions in multi-camera systems". He is now working with me for his M.Sc. thesis. He is now pursuing his Ph.D. study at Ohio State University.
- ◇ Sare Gul Sevil, "Tag expansion methods for photo-sharing websites", M.Sc. Thesis, Bilkent University, 2010.
- ◇ Hilal Zitouni, "Naming Faces on the web", M.Sc. Thesis, Bilkent University, 2010.
- ◇ Sermetcan Baysal, "Recognition of animal and human behaviour". He is planning to complete his M.Sc. thesis in a few months.
- ◇ Damla Arifoglu, "Analysis of Ottoman documents". She is planning to complete her M.Sc. thesis this summer.
- ◇ Yigit Caliskan, "Robot Motion Understanding". He is pursuing his M.Sc. thesis.
- ◇ Hande Adiguzel, "Segmentation of Ottoman Documents". She is pursuing her M.Sc. thesis.

## Publications

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77. Can, F, Duygulu, P., "A line-based representation for matching words in historical manuscripts" , **Pattern Recognition Letters**, first submission on December 2, 2009, revision submitted on October 19, 2010, still in review.
76. Can, E.F., Can, F., Duygulu, P., Kalpakli, M., "Categorization of Ottoman Literary Texts using Machine Learning Techniques" , **Language Resources and Evaluation**, first submission on January 9, 2009, revision submitted on February 15, 2010, still in review.
75. Pehlivan, S., Duygulu, P., "A new pose-based representation for recognizing actions from multiple cameras" , **Computer Vision and Image Understanding**, accepted for publication.
74. Duygulu, P., Bastan, M., "Multimedia translation for linking visual data to semantics in videos" , **Machine Vision and Applications**, DOI: 10.1007/s00138-009-0217-8
73. Ozkan, D., Duygulu, P., "Interesting Faces: A Graph Based Approach for Finding People in News" , **Pattern Recognition**, Volume 43, Issue 5, May 2010, Pages 1717-1735.
72. Sevil, S. G., Kucuktunc, O. , Duygulu, P. , Can, F., "Automatic Tag Expansion using Visual Similarity for Photo Sharing Websites" , **Multimedia Tools and Applications**, Volume 49, Number 1 , August, 2010.
71. Can, E. F., Duygulu, P., Can F., Kalpakli, M., "Redif Extraction in Handwritten Ottoman Literary Texts" , 20th International Conference on Pattern Recognition (ICPR 2010), Istanbul, Turkey, 2010.
70. Baysal, S., Kurt, M.C., Duygulu, P., "Recognizing Human Actions Using Key Poses" , 20th International Conference on Pattern Recognition (ICPR 2010), Istanbul, Turkey, 2010.
69. Soysal, T., Adiguzel, H., Oktem, A., Haman, A., Can, E. F., Duygulu, P., Kalpakli, M., "Ataturk'un el yazmalarinin islenmesi (in Turkish)" , IEEE 18. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2010), Diyarbakir, Turkey, 2010.
68. Ikizler, N. ve Duygulu P., "Histogram of Oriented Rectangles: A New Pose descriptor for Human Action Recognition" , **Image and Vision Computing**, volume 27, Issue 10, pp. 1515-1526, September 2, 2009
67. Yucel, Z., Sara, Y., Duygulu, P. Onur, R., Esen, E., Ozguler, B. "Automated Discrimination of Psychotropic Drugs in Mice via Computer Vision-Based Analysis" , **Journal of Neuroscience Methods**, Volume 180, Issue 2, pp. 234-242, June 15, 2009
66. Pehlivan, S., Duygulu, P., "3D Human Pose Search using Oriented Cylinders" , IEEE Workshop on Search in 3D and Video (S3DV), in conjunction with the 12th IEEE International Conference on Computer Vision (ICCV 2009), Kyoto, Japan, 2009

65. Zitouni, H., Bulut, M. F., Duygulu, P., "Recognizing faces in news photographs on the web", 24th International Symposium on Computer and Information Sciences (ISCIS 2009), 2009
64. Bulut, F. Duygulu, P., "Kisi Iliskileri Kullanilarak Fotograflardaki Yzlerin isimlendirilmesi (in Turkish)", IEEE 17. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2009), Antalya, Turkey, 2009.
63. Torun, B., Yurdakul, M., Duygulu, P., "Benzer Yuzlerin Bulunmasi (in Turkish)", IEEE 17. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2009), Antalya, Turkey, 2009.
62. Sandikci, S., Duygulu, P., Ozguler, B., "Laboratuar Hayvanlarinin Davranislarinin Goru Tabanli Cozumlenmesi: 3 Boyutlu Gradyan Tabanli Bir Yaklasim (in Turkish)", IEEE 17. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2009), Antalya, Turkey, 2009.
61. Kurt, M. C., Baysal, S., Damci, P., Aydogdu, G., Telmen, I., Duygulu, P., "Magaza Kataloglarinda Icerik Bazli Resim Arama (in Turkish)", IEEE 17. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2009), Antalya, Turkey, 2009.
60. Kucuktunc, O., Sevil, S. G., Tosun, A. B., Zitouni, H., Duygulu, P., Can, F., "Tag Suggestr: Automatic Photo Tag Expansion using Visual Information for Photo Sharing Websites", Proc. 3rd International Conference on Semantic and Digital Media Technologies, (SAMT 2008), Koblenz, Germany, 2008.
59. Zitouni, H., Sevil, S.G., Ozkan, D., Duygulu, P., "Re-ranking of image search results using a graph algorithm", Proc. 19th International Conference on Pattern Recognition (ICPR 2008), Tampa, Florida, USA, 2008.
58. Ikizler, N., Cinbis, R. G., Duygulu, P., "Human action recognition with line and flow histograms", Proc. 19th International Conference on Pattern Recognition (ICPR 2008), Tampa, Florida, USA, 2008.
57. Ikizler, N., Cinbis, R. G., Pehlivan, S., Duygulu, P., "Recognizing actions from still images", Proc. 19th International Conference on Pattern Recognition (ICPR 2008), Tampa, Florida, USA, 2008.
56. Hatun, K., Duygulu, P., "Pose sentences: A new representation for action recognition using sequence of pose words", Proc. 19th International Conference on Pattern Recognition (ICPR 2008), Tampa, Florida, USA, 2008.
55. Sevil, S. G., Zitouni, H., Ikizler, N., Ozkan, D., Duygulu, P., "Resim Arama Sonuclarinin Cizge Tabanli bir Yontemle Yeniden Siralanimasi (in Turkish)", IEEE 16. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2008), Didim, Turkey, 2008.
54. Can, E. F., Duygulu, P., "El Yazisi Belgelerde Kelime Tabanli Arama (in Turkish)", IEEE 16. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2008), Didim, Turkey, 2008.

53. Duygulu, P., Bastan, M., Ozkan, D., "Linking image and text for semantic labeling of images and videos", Machine Learning Techniques for Multimedia, ed. M. Cord, P. Cunningham, Springer-Verlag, 2008.
52. Ikizler, N. Duygulu, P. "Human Action Recognition Using Distribution of Oriented Rectangular Patches", Proc. 2nd Workshop on Human Motion: Understanding, Modeling, Capture and Animation, In conjunction with Eleventh IEEE International Conference on Computer Vision (ICCV2007), Rio de Janeiro, Brazil, 2007 (Lecture Notes in Computer Science, Volume 4814/2007).
51. Can, T., Duygulu, P., "Searching for Repeated Video Sequences", Proc. 9th ACM SIGMM International Workshop on Multimedia Information Retrieval (MIR), In conjunction with ACM Multimedia 2007, University of Augsburg, Germany, 2007.
50. Ataer, E., Duygulu, P., "Matching Ottoman Words: An Image Retrieval Approach to Historical Document Indexing", Proc. ACM International Conference on Image and Video Retrieval, (CIVR), Amsterdam, The Netherlands, 2007.
49. Aksoy, S., Duygulu, P., Aksoy, C., Aydin, E., Gunaydin, D., Hadimli, K., Koc, L., Olgun, Y., Orhan, C., Yakin, G., "Bilkent University at TRECVID 2007", Proc. TREC Video Retrieval Evaluation (TRECVID), Gaithersburg, MD, November 5-6, 2007.
48. Can, T., Duygulu, P., "Reklamlerin Belirlenmesi ve Takibi (in Turkish)", IEEE 15. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi(SIU), Eskisehir, Turkey, 2007.
47. Ataer, E., Duygulu, P., "Osmanlica kelimeleri esleme (in Turkish)", IEEE 15. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU), Eskisehir, Turkey, 2007.
46. Acar, C., Atlas, A., Cevik, K., Olmez, I., Unlu, M., Ozkan, D., Duygulu, P., "Yuz Bulma Yontemlerinin Haber Videolari icin SistematiK Karsilastirmasi (in Turkish)", IEEE 15. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU), Eskisehir, Turkey, 2007.
45. Pan, J.-Y., Yang, H.-Y., Faloutsos, C., Duygulu, P., "Cross-modal Correlation Mining using Graph Algorithms", Knowledge Discovery and Data Mining: Challenges and Realities with Real World Data, ed. X. Zhu, I. Davidson, Idea Group Reference, 2007.
44. Duygulu, P., Bastan M., Forsyth, D., "Translating images to words for recognizing objects in large image and video collections", Towards Category-Level Object Recognition, ed. J. Ponce, M. Hebert, C. Schmid, A. Zisserman, Lecture Notes in Computer Science Series, Vol. 4170, Springer Verlag, 2006.
43. Ataer, E., Duygulu, P., "Retrieval of Ottoman Documents", Proc. 8th ACM SIGMM International Workshop on Multimedia Information Retrieval (MIR 2006), In conjunction with ACM Multimedia 2006, Santa Barbara, CA, USA, 2006.
42. Ozkan, D., Duygulu, P., "Finding People Frequently Appearing in News", Proc. International Conference on Image and Video Retrieval (CIVR 2006), Arizona State University, Tempe, AZ, USA, 2006, (Lecture Notes in Computer Science, Volume 4071/2006).

41. Bastan, M., Duygulu, P., "Recognizing Objects and Scenes in News Videos", Proc. International Conference on Image and Video Retrieval (CIVR 2006), Arizona State University, Tempe, AZ, USA, 2006, (Lecture Notes in Computer Science, Volume 4071/2006).
40. Ozkan, D., Duygulu, P., "A Graph Based Approach for Naming Faces in News Photos", Proc. IEEE Conference on Computer Vision and Pattern Recognition (CVPR2006), New York, NY, 2006.
39. Duygulu, P. "El Yazisi Tanima (in Turkish)", Bilisim Ansiklopedisi, Papatya Yayıncılık, 2006
38. Aksoy, S., Duygulu, P., Akcay, G., Ataer, E., Bastan, M., Can, T., Cavus, O., Dogrusoz, E., Gokalp, D., Akaydin, A., Akoglu, L., Angin, P., Cinbis, G., Gur, T., Unlu, M., "Bilkent University at TRECVID 2006", Proc. TREC Video Retrieval Evaluation (TRECVID), Gaithersburg, MD, November, 2006.
37. Ozkan, D., Duygulu, P., "Yuz ve isim Iliskisi Kullanarak Haberlerdeki Kisilerin Bulunmasi (in Turkish)", IEEE 14. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2006), Antalya, Turkey, 2006.
36. Bastan, M., Duygulu, P., "Haber Videolarinda Nesne Tanima ve Otomatik Etiketleme (in Turkish)", IEEE 14. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2006), Antalya, Turkey, 2006.
35. Iyengar, G., Duygulu, P., Feng, S., Ircing, P., Khudanpur, S., Klakow, D., Krause, M., Manmatha, R., Nock, H., Petkova, D., Pytlik, B., Virga, P., "Joint Visual-Text Modeling for Automatic Retrieval of Multimedia Documents", Proc. 13th ACM Multimedia Conference, Singapore, 2005.
34. Ikizler, N., Duygulu, P., "Person Search Made Easy", Proc. 4th International Conference on Image and Video Retrieval (CIVR 2005), Singapore, 2005, (Lecture Notes in Computer Science, Volume 3568/2005).
33. Virga, P., Duygulu, P., "Systematic Evaluation of Machine Translation Methods for Image and Video Annotation", Proc. The Fourth International Conference on Image and Video Retrieval (CIVR 2005), Singapore, 2005, (Lecture Notes in Computer Science, Volume 3568/2005).
32. Ikizler, N., Duygulu, P., "Haber Videolari iin Yuz Bulma Yontemlerinin Iyilestirilmesi (in Turkish)", IEEE 13. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi (SIU 2005), Kayseri, Turkey, 2005.
31. Aksoy, S., Avci, A., Balcik, E., Cavus, O., Duygulu, P., Karaman, Z., Kavak, P., Kaynak, C., Kucukayvaz, E., Ocalan, C., Yildiz, P., "Bilkent University at TRECVID 2005", Proc. TREC Video Retrieval Evaluation (TRECVID), Gaithersburg, MD, November 14-15, 2005.

30. Duygulu, P., Pan, J.-Y., Forsyth, D., "Towards Auto-Documentary: Tracking the evolution of news on time", Proc. ACM Multimedia Conference, New York, NY, October 10-16, 2004.
29. Pan, J.-Y., Yang, H.-J., Faloutsos, C., Duygulu, P., "Automatic Multimedia Crossmodal Correlation Discovery", Proc. 10th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining(KDD2004), Seattle, WA, August 22-25, 2004.
28. Duygulu, P., Hauptmann, A., "What's news, what's not? Associating News videos with words", Proc. 3rd International Conference on Image and Video Retrieval (CIVR 2004), Ireland, July 21-23, 2004, (Lecture Notes in Computer Science, Volume 3115/2004, pp. 132-140).
27. Pan, J.-Y., Yang, H.-J., Faloutsos, C., Duygulu, P., "GCap: Graph-based Automatic Image Captioning", Proc. 4th International Workshop on Multimedia Data and Document Engineering (MDDE 04), in conjunction with Computer Vision and Pattern Recognition Conference (CVPR 2004), Washington DC, July 2nd 2004.
26. Duygulu, P., Chen, M.-Y., Hauptmann, A., "Comparison and combination of two novel commercial detection methods", IEEE International Conference on Multimedia and Expo (ICME 2004), Taipei, Taiwan, June 27-30, 2004.
25. Pan, J.-Y., Yang, H.-J., Duygulu, P., Faloutsos, C., "Automatic Image Captioning", Proc. IEEE International Conference on Multimedia and Expo (ICME 2004), Taipei, Taiwan, June 27th 30th, 2004.
24. Aksoy, S., Bircan, K., Ciraci, S., Duygulu, P., Karaca, E., Kasirga, S., Sevilimis, T., Sener, M., "Bilkent University at TRECVID 2004", Proc. TREC Video Retrieval Evaluation (TRECVID), Gaithersburg, MD, November 15-16, 2004.
23. Iyengar, G., Duygulu, P., Feng, S., Ircing, P., Khudanpur, S., Klakow, D., Krause, M., Manmatha, R., Nock, H.J., Petkova, D., Pytlik, B., Virga, P., "Joint Visual-text Modeling for Multimedia Retrieval", Technical Report, CLSP Workshop, November 24, 2004.
22. Barnard, K., Duygulu, P., Forsyth, D., de Freitas, N., Blei, D., Jordan, M., "Matching Words and Pictures", **Journal of Machine Learning Research (JMLR)**, Special Issue on Machine Learning Methods for Text and Images, vol. 3, 1107-1135, (2003).
21. Xu, Y., Duygulu, P., Saber, E., Tekalp, M., Yarman Vural, F., "Object Based Image labeling through Learning-by-Example and Multi-level Segmentation", **Pattern Recognition**, vol. 36, no. 6, 1407-1423, (2003).
20. Duygulu, P., Ozcanli, O. C., Papernick, N., "Comparison of Feature Sets using Multimedia Translation", Eighteenth International Symposium on Computer and Information Sciences (ISCIS 2003), Antalya, Turkey, November 3-5, 2003 (Lecture Notes in Computer Science, Volume 2869/2003, pp. 513-520).

19. Duygulu, P., Wactlar, H., "Associating video frames with text", Proc. Multimedia Information Retrieval Workshop, in conjunction with the 26th annual ACM SIGIR conference on Information Retrieval, Toronto, Canada, August 1, 2003.
18. Barnard, K., Duygulu, P., Guru, R., Gabbur, P., Forsyth, D., "The effects of segmentation and feature choice in a translation model of object recognition", Proc. Computer Vision and Pattern Recognition (CVPR2003), Madison, Wisconsin, June 16-22, 2003.
17. Hauptmann, A., Ng, D., Baron, R., Chen, M-Y., Christel, M., Duygulu, P., Huang, C., Lin, W-H., Wactlar, H., Moraveji, N., Papernick, N., Snoek, C.G.M., Tzanetakis, G., Yang, J., Yan, R., Jin, R., "Informedia at TRECVID 2003: Analyzing and Searching Broadcast News Video", Proc. (VIDEO) TREC 2003, Gaithersburg, MD, November 17-21, 2003.
16. Duygulu, P., Wactlar, H., Papernick, N., Ng, D., "Linking Visual and Textual Data on Video", Workshop on Multimedia Contents in Digital Libraries , Crete, Greece, June 2-3, 2003.
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## Citations

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- ◇ According to ISI Web of Science : 651 citations (266 citations when conferences are excluded).
- ◇ According to Scopus: 639 citations, h-index = 9.
- ◇ According to Google Scholar: 2510 citations, h-index = 15, g-index = 50.

## Languages

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- ◇ Fluent in all aspects of Turkish (native) and English.

## Personal

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References are available upon request.