Nazlı İkizler

Bilkent University
Dept of Computer Engineering
Ankara, Turkey, 06800
work: (+90) 312-290-2094
cell: (+90) 532-366-2749
nazli.ikizler@gmail.com

Research Interests

Computer vision (especially human activity recognition and retrieval, semantic analysis of multimedia, face recognition), machine learning (cost-sensitive classification), statistical and structural pattern recognition, multimedia data mining, speech recognition

Education

02/2005 – 06/2006	**University of Illinois at Urbana-Champaign, USA** Visiting Research Scholar *Advisor:* David Forsyth
09/2002 – 08/2008 **(expected graduation)**	**Bilkent University, Ankara, Turkey** Ph.D. in Computer Engineering *Advisor:* David Forsyth (UIUC), Pınar Duygulu *CGPA:* 3.86/4.00
08/2003	**Max Planck Institute for Biological Cybernetics, Tuebingen, Germany** Machine Learning Summer School (MLSS'2003) Scholar
09/2000 – 09/2002	**Bilkent University, Ankara, Turkey** M.S. in Computer Engineering *Advisor:* H. Altay Güvenir *CGPA:* 3.96/4.00
09/1996 – 06/2000	**Bilkent University, Ankara, Turkey** B.S. in Computer Engineering *CGPA:* 3.54/4.00

Research Experience

University of Illinois at Urbana-Champaign (UIUC) – USA
Visiting Research Scholar (02/2005 – 06/2006)

- **Human activity recognition:** Developed a complete system for recognizing and retrieving complex composite human activities. This system is based on 3D modeling of the human body parts separately, allowing us to span a wide range of activities. It includes novel algorithms for 2d-3d lifting, action and activity modeling with Hidden Markov Models and querying of video datasets with text input using finite state automata. No visual example is needed to query for a video and composition across time and across space is possible. The system is also invariant to change in viewpoints and different outfits. Application domains include complicated TV videos as well as complex human activity datasets and test results demonstrate the effectiveness of the approach.

- **Face recognition:** Worked in a project for improving face recognition in large scale datasets (e.g. TV videos) using multimodal information from text and speech transcripts. Project work included application of various pattern recognition techniques, kernel PCA, LDA, SVM and preprocessing steps for illumination changes.

- **Speech recognition:** Implemented a keyword spotting system for TV audio using a combination of generative (HMM) and discriminative models (SVM) over a challenging dataset in the presence of music and different (non-native) speakers.

Bilkent University RETINA Vision and Learning Group – Ankara (Turkey)
Research Assistant (09/2004 – Present)

- **Human action recognition:** Proposed a pose descriptor based on the orientations of rectangular regions of the human body. This pose descriptor is used effectively for action recognition with classification algorithms such as DTW and SVM. Results indicate significant performance over the state-of-the art datasets.

- **Face recognition and retrieval:** Implemented a system integrating multiple clues from video and text for improving the accuracy of people search in video. Face detection performance is improved using skin modeling and transcripts of video have been used for localization of people of interest in the videos.

Bilkent University Machine Learning Group – Ankara (Turkey)
Research Assistant (09/2001 – 09/2004)

- **Machine learning algorithms:** Developed cost-sensitive classification algorithms. Proposed a benefit maximization framework based on feature intervals classification. Application areas include medical and financial datasets.

Publications

Computer Vision

- **Nazli Ikizler** and David Forsyth, "Searching for Complex Human Activities with No Visual Examples", *accepted to International Journal of Computer Vision, 2008.*
- **Nazli Ikizler** and Pinar Duygulu, "Human Action Recognition Using Distribution of Oriented Rectangular Patches", *2nd Workshop on Human Motion Understanding, Modeling, Capture and Animation In Conjunction with Eleventh IEEE International Conference on Computer Vision (ICCV 2007),* Rio de Janeiro, October 2007.
- **Nazli Ikizler** and David Forsyth, "Searching Video for Complex Activities with Finite State Models", *In Proceedings of IEEE Conf on Computer Vision and Pattern Recognition (CVPR),* Minneapolis*,* June 2007*.*
- **Nazli Ikizler**, Jai Vasanth, Linus Wong and David Forsyth, "Finding Celebrities in Video", EECS Department University of California, Berkeley Technical Report No. UCB/EECS-2006-77, 2006.
- **Nazli Ikizler**, Pinar Duygulu, "Person Search Made Easy", *In Proceedings of The Fourth International Conference on Image and Video Retrieval (CIVR 2005)*, Singapore, July 20-22, 2005.
- Sare Gul Sevil, Hilal Zitouni, **Nazli Ikizler**, Derya Ozkan, Pinar Duygulu*,* "Resim Arama Sonuclarinin Cizge Tabanli bir Yontemle Yeniden Siralanmasi (in Turkish)", In *Proceedings of IEEE 16. Sinyal Isleme, Iletisim ve Uygulamalari Kurultayi (SIU 2008),* Didim, Turkey, April 20-22, 2008*.*
- **Nazli Ikizler**, Pinar Duygulu, "Haber Videolari icin Yuz Bulma Yontemlerinin Iyilestirilmesi (in Turkish)", *In Proceedings of IEEE 13. Sinyal Isleme ve Iletisim Uygulamalari Kurultayi*, Turkey, May 16-18, 2005.

Machine Learning

- H. Altay Güvenir, Narin Emeksiz, **Nazli Ikizler**, Necati Örmeci, "Diagnosis of gastric carcinoma by classification on feature projections", *Artificial Intelligence in Medicine*, Vol. 31, No. 3, 2004.
- **Nazli Ikizler** and H. Altay Güvenir, "Maximizing Benefit of Classifications Using Feature Intervals", *In Proceedings of Seventh International Conference on Knowledge-Based Intelligent Information & Engineering Systems - KES 2003, Lecture Notes in AI,* Springer-Verlag, 2003.
- **Nazli Ikizler** and H. Altay Güvenir, "Feature Dependency in Benefit Maximization: A Case Study in the Evaluation of Bank Loan Applications", *In Proceedings of the Twelfth Turkish Symposium on Artificial Intelligence and Neural Networks (TAINN'2003)*, Canakkale, Turkey, July 2-4, 2003.
- **Nazli Ikizler**, I. Emre Sahin, Aylin Koca, "An Algorithm Testbed for Cost-Sensitive Classifiers", *In Proceedings of First Turkish Aspect-Oriented Software Development Workshop (TAOSD '03)*, Ankara, 2003.
- **Nazli Ikizler**, "Benefit Maximizing Classification Using Feature Intervals", Technical Report BU-CE-0208, Bilkent University, 2002.
- **Nazli Ikizler** and H. Altay Güvenir, "Mining Interesting Rules in Bank Loans Data", *In Proceedings of the Tenth Turkish Symposium on Artificial Intelligence and Neural Networks (TAINN'2001),* Gazimagusa, June 2001.

Teaching Experience

- **Bilkent University, Ankara, Turkey**
  Teaching Assistant (2000 – present)
  Courses Assisted
  - Artificial Intelligence
  - Programming Languages
  - Fundamentals of Computer Science

- Algorithms and Programming 1-2

Work Experience

01/2004 – 10/2004	ASELSAN Inc., Ankara, Turkey **Full-time Engineer** Data Management Administrator and Data Mining Expert in this research-oriented company working on military applications. Projects developed on .NET environment.
09/1999 – 10/1999	ASELSAN Inc., Ankara, Turkey **Summer Trainee** Carried out networking operations
07/1998 – 08/1998	Datasel A.S., Ankara, Turkey **Summer Trainee** Worked on a database project sponsored by National Agriculture Ministry

Related Course Work

- Computer Vision
- Neural Networks
- Natural Language Processing
- Data Mining
- Advanced Statistics
- Statistical Learning and Simulation
- Topics in Graph Theory and Algorithms
- Cryptography and Network Security
- Aspect Oriented Software Development
- Distributed Database Systems
- Artificial Intelligence
- Algorithms I-II

Activities

- Reviewer for
  - Journal of Computers and Industrial Engineering

Awards and Honors

- *August 2003:* Scholarship awarded by Max Planck Institute for Biological Cybernetics for attending Machine Learning Summer School 2003 (MLSS 2003)
- *1996 - present:* Full scholarship awarded by Bilkent University
- *1996-2000:* In Dean's List, Bilkent University (Academic standing: High Honor)
- *2002:* Ranked 1st in graduation from MS Computer Science
- *2000:* Ranked 6th in graduation from CS Department of Bilkent University
- *1996:* Ranked 2nd in graduation from high school
- *1996:* Ranked 3rd in BlackSea Region in TUBITAK Biology exams

Technical Skills

- *Programming languages:* Matlab, C, C++, Java, Visual Basic.NET, SQL, AspectJ, Pascal, dBASE, Verilog, Assembly (MIPS)
- *Web and scripting languages:* PHP, ASP, ASP.NET
- *Operating systems:* Windows, Linux

References

Prof. David Forsyth
University of Illinois at Urbana-Champaign
Department of Computer Science,
201 N Goodwin Ave, Urbana, IL 61801
Office: 3310 SC
Phone: (217) 265-6851
email: daf@cs.uiuc.edu

Dr. Pınar Duygulu
Bilkent University
Dept of Computer Engineering
Bilkent, Ankara, 06800, Turkey
Office: EA 433
Phone : (+90 312) 290-3143
email: duygulu@cs.bilkent.edu.tr

Prof. H. Altay Güvenir
Bilkent University
Dept of Computer Engineering
Bilkent, Ankara, 06800, Turkey
Office: EA 518
Phone : (+90 312) 290-1218
email: guvenir@cs.bilkent.edu.tr