

Onur Kucuktunc

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Education	The Ohio State University, College of Engineering, Columbus 2009 – ... Department of Computer Science and Engineering, Ph.D. Graduate Teaching Associateship awarded by the department CGPA = 3.94 / 4.00
	Graduate Research Assistant at High Performance Computing Lab 2011 – ... Supervisor: Assoc. Prof. Umit V. Catalyurek
	Graduate Research Assistant at Database Research Group 2009 – 2011 Supervisor: Assoc. Prof. Hakan Ferhatosmanoğlu
	Bilkent University, Faculty of Engineering, Ankara, Turkey 2007 – 2009 Department of Computer Engineering, M.S. Scholarship awarded by TUBITAK Supervisor: Prof. Özgür Ulusoy and Assoc. Prof. Uğur Güdükbay CGPA = 3.75 / 4.00
	Bilkent University, Faculty of Engineering, Ankara, Turkey 2003 – 2007 Department of Computer Engineering, B.S. Ranked 52nd in University Entrance Examination in quantitative in 2003 Full scholarship awarded by Bilkent University CGPA = 3.57 / 4.00

Research Interests
Similarity and diversity search in spatial and high-dimensional data
Data and graph mining, social network analysis
Sentiment analysis, opinion retrieval
Video/image processing, content-based copy detection

- Journal Publications**
1. **O. Kucuktunc**, H. Ferhatosmanoglu, “ λ -Diverse Nearest Neighbors Browsing for Multi-dimensional Data,” (to appear in) *IEEE Transactions on Knowledge and Data Engineering (TKDE)*.
 2. **O. Kucuktunc**, M. Bastan, U. Gudukbay, O. Ulusoy, “Video Copy Detection Using Multiple Visual Cues and MPEG-7 Descriptors,” *Journal of Visual Communication and Image Representation*, vol.21, no.8, pp. 838-849, Nov, 2010.
 3. **O. Kucuktunc**, U. Gudukbay, O. Ulusoy, “Fuzzy Color Histogram-based Video Segmentation,” *Computer Vision and Image Understanding*, vol.114, no.1, pp. 125-134, Jan, 2010.
 4. S.G. Sevil, **O. Kucuktunc**, P. Duygulu, F. Can, “Automatic Tag Expansion Using Visual Similarity for Photo Sharing Websites,” *Multimedia Tools and Applications*, vol.49, no.1, pp. 81-99, Aug, 2010.
 5. **O. Kucuktunc**, U. Gudukbay, O. Ulusoy, “A Natural Language Based Interface for Query Specification in a Video Database Management System,” *IEEE Multimedia*, vol.14, no.1, pp. 83-89, Jan-Mar, 2007.

Conference Publications

1. K. Kaya, E. Saule, **O. Kucuktunc**, U. Catalyurek, “Algorithms for Offline Tracking of Connected Components in Large Evolving Networks,” (to appear) In *Proc. Workshop on Dynamic Network Analysis (DNA-SDM)*, 2012.
2. **O. Kucuktunc**, B.B. Cambazoglu, I. Weber, H. Ferhatosmanoglu, “A Large-Scale Sentiment Analysis for Yahoo! Answers,” In *Proc. 5th ACM Int’l Conf. Web Search and Data Mining (WSDM’12)*, 2012 (acceptance rate 20.7%).
3. **O. Kucuktunc**, D. Zamalieva, “Fuzzy Color Histogram-based CBIR System,” In *Proc. 1st Int’l Fuzzy Systems Symp. (FUZZYSS’09)*, Ankara, Turkey, 2009.
4. **O. Kucuktunc**, S.G. Sevil, A.B. Tosun, H. Zitouni, P. Duygulu, F. Can, “Tag Suggestr: Automatic Photo Tag Expansion using Visual Information for Photo Sharing Websites,” In *Proc. 3rd Int’l Conf. Semantic and Digital Media Technologies (SAMT08)*, 2008. *Lecture Notes in Computer Science*, vol. 5392/2008, Springer Verlag, pp. 63-71, 2008.
5. **O. Kucuktunc**, M. Bastan, U. Gudukbay, O. Ulusoy, “Bilkent University Multimedia Database Group at TRECVID 2008,” In *Proc. TREC Video Retrieval Evaluation (TRECVID’08)*, 2008.
6. A. Bulbul, **O. Kucuktunc**, B.Ozguç, “Animation of Boiling Phenomena,” In *Proc. 3DTV-CON*, May 2008, IEEE Xplore Electronic Publications, 2008.

Technical Reports

1. **O. Kucuktunc**, H. Ferhatosmanoglu, Diverse Browsing for Spatial Data, OSU-CISRC-1/11-TR02, February 2011.

Theses

Content-based Video Copy Detection Using Multimodal Analysis
Master’s Thesis, Bilkent University, Ankara, Turkey, 2009

Experience

Internship, Yahoo! Research, Barcelona, Spain Spring 2011

- Worked on sentiment analysis, sentiment prediction, opinion diversity, entity-based bursty event detection projects on Yahoo! Answers data
- Familiarized with Hadoop, MapReduce paradigm, GBDT method
- Mentors: Dr. Aristides Gionis, Dr. B. Barla Cambazoglu

Graduate research assistant, The Ohio State University

- High Performance Computing Lab Autumn 2011 - ...
- Database Research Group Autumn 2009 - Summer 2011

Teaching assistant, Bilkent University

- Algorithms and Programming I Spring 2009
- Algorithms and Programming I Fall 2008
- Fundamental Structures of Computer Science II Spring 2008
- Algorithms and Programming II Fall 2007

Contract worker, Google Inc. Summer 2008

- Summer of Code program
- Implemented Automatic Feature Matching and integrated with hugin
- Mentored by Alexandre Jenny, Kolor

Summer trainee, iFountain LLC, Molkay Yazilim, Ankara Summer 2006

- Created adaptor processing events based on time of the day
- Made improvements on logging
- User interface enhancements for RapidConfigurator
- AJAX/JS-based monitoring script for RapidWatcher

Projects

Citation, Venue, and Reviewer Recommendation on Citation Graph 2012

We developed a method, direction-aware random walk with restart, to suggest relevant papers using the relations in citation graph. Using the metadata harvested mainly from open-access databases, we implemented a scalable web interface of the service, accessible via <http://theadvisor.osu.edu>

Sentiment Analysis and Opinion Retrieval 2011

Our analysis starts with a large-scale study on the correlation of various features with the observed attitude and sentimentality. We investigate the correlation of sentiments with textual, topical, demographical, spatial, and temporal features (see publications).

Diversity on Spatial, High-Dimensional, and Time-Series Data 2009-2011

We investigate the concepts of *diversity* and *diverse nearest neighbor search* in various fields and application areas with different types of data, such spatial, high-dimensional, and time-series data. Although the definition of diversity depends on the field, we propose techniques without neglecting the general objective of *diversification*, which is to maximize the similarity of search results to the query, by minimizing the pairwise similarity between the results (see publications).

Content-based Copy Detection (CBCD) using MPEG-7 features 2008-2010

Content-based copy detection task for TRECVID 2008, proposed a video copy detection framework that detects copy segments by fusing the results of three different techniques: facial shot matching, activity subsequence matching, and non-facial shot matching using low-level features (see thesis and publications).

Automatic Feature Matching for Panorama Stitching Software 2008

Google Summer of Code 2008 project for hugin/panotools, introduced and evaluated automatic keypoint matching algorithms for panorama stitching.

TagSuggestr: Automatic Tag Expansion Using Visual Similarity 2008

Information Retrieval Systems project, computer vision-based tag recommendation for photo sharing websites, such as Flickr (see publications).

3D Face Reconstruction from 2D Images for Effective Face Recognition 2008

Computer Vision project, proposed a 3D face reconstruction method by automatically matching SIFT features, an alternative to most implementations requiring manual selection of feature points among different images.

Animation of Boiling Phenomena 2007

Applications of Computer Graphics project, presented an efficient method for the simulation of boiling water based on modeling grid-based fluid surface, and bubbles & waves as particles (see publications).

Various Approaches to Traveling Salesman Problem 2006 - 2007

Senior design project, developed some optimized algorithms for solving famous problem called TSP. Different algorithms such as genetic, branch & bound, etc. can be run in parallel and evaluated.

Pathway Analysis Tools for Integration and Knowledge Acquisition 2006

Pathway Analysis Tools for Integration and Knowledge Acquisition project (PATIKA), worked on BioPAX & SBML to PATIKA Model conversion.

BilVideo: A Video Database Management System 2005

NLP project for BilVideo Video Database Management System, introduced querying

with natural language and made the integration of NLP with the Web-based Visual Query Interface (see publications).

Awards and Honors	Honorable Mention, 2011 International Photography Exhibition	2011
	Honorable Mention, 2010 International Photography Exhibition	2010
	Secretary of Turkish Students Association (TSA) at OSU	2010-2011
	Member of CSE Graduate Steering Committee	2010-2011
	6 semesters for High Honor student, 2 semesters for Honor student	2003-2007
	Winner of web standards awards competition SWSSY	2006
	Success Certificate from the Photographic Art Society FSK	2005
	Member of winner team: SoftwareQuest, CS102 Project	2004
	Ranked 52nd in National University Entrance Examination in quantitative	2003

Computer Skills C, C++, Java, Matlab, SQL, MapReduce (Advance)
Assembly, Verilog, Python, C#, Ruby (Beginner)

Academic and Social Activities External reviewer for conferences:
CIKM'08, SSTD'09, SIGMOD'10, ICDM'10, ICDE'11, ECML'11, VLDB'12, IPDPS'12
External reviewer for journals:
VLDBJ, IEEE Transactions on Multimedia, TKDE
Student volunteer at WSDM 2012, Seattle
Student volunteer at CVPR 2010, San Francisco
Member of Linux Users Group (LKD)
Member of National Geographic Society
Member of Bilkent University Photography Club

Languages Turkish (Native), English (Advance), German (Beginner)

References Available upon request