

LEMAN AKOGLU

Computer Science Department
Carnegie Mellon University
5000 Forbes Ave, Wean Hall 7203
Pittsburgh, PA 15213

Office: +1 (412) 268-3621
Mobile : +1 (412) 996-9190
lakoglu@cs.cmu.edu
<http://www.andrew.cmu.edu/~lakoglu>

EDUCATION

- **Carnegie Mellon University** Pittsburgh, PA
Ph.D., Computer Science *Fall 2007 - Present*
Research Interests: Large Graph Mining, Social Network Analysis
Advisor: Prof. Christos Faloutsos (christos@cs.cmu.edu)
Coursework: Machine Learning, Spectral Graph Theory and Scientific Computing,
Multimedia Databases and Data Mining, Graduate Algorithms, Probabilistic Graphical Models,
Type Systems for Programming Languages, Advanced Computer Architecture
- **Bilkent University** Ankara, Turkey
B.S., Computer Science *Sep 2003 - May 2007*
Thesis Advisor: Prof. Ozgur Ulusoy
GPA: 3.95/4.00 (2nd out of 150)

REFEREED PUBLICATIONS

- M. McGlohon, L. Akoglu, C. Faloutsos. Weighted Graphs and Disconnected Components: Patterns and a Generator. **ACM SIGKDD** International Conference on Knowledge Discovery and Data Mining. Las Vegas, Nevada, Aug. 2008
- L. Akoglu, M. McGlohon, C. Faloutsos. RTM: Laws and a Recursive Generator for Weighted Time-Evolving Graphs. **ICDM IEEE** International Conference on Data Mining. Pisa, Italy, Dec. 2008

UNDER REVIEW

- L. Akoglu, M. McGlohon, C. Faloutsos. OddBall: Spotting Anomalies in Weighted Graphs.

WORK EXPERIENCE

- **Intelligent Portals and Focused Crawling** *Sep 2006 - May 2007*
Senior Thesis
 - Extension to Rule-Based Focused Crawling algorithm applying page fragmentation and coupling
 - Effective and efficient information extraction algorithms applying lazy and eager machine learning approaches together
- **BOSCH Industry and Trade Inc.** Bursa, Turkey
Summer training in Research and Development Department *July 2006 - Sep 2006*
 - Implementation of a dynamic report generation software in MS Access and Visual Basic
 - Relational database design for tracking the hardware and users in the department and design and implementation of the GUI for search and updates
- **Bilkent University** Ankara, Turkey
RETINA Research Project *June 2006 - July 2006*
 - Research on content-based classification and retrieval of images and videos
 - Database design of the image/video repository, GUI design and implementation for classification and retrieval, tests on TRECVID 2006 data set
- **Armakom IT Inc.** Ankara, Turkey
Summer training in IT department *June 2006 - July 2006*
 - Member of the 112 Emergency Service Project
 - Implementation of a web-based visualization application for statistical queries using Web Services, ActiveX controls, Microsoft .NET and Visual Basic
- **Havelsan Aerospace Electronics Industry and Trade Inc.** Ankara, Turkey
Summer training in IT Department *June 2005 - July 2005*
 - Member of the Meltem Project
 - Design and implementation of several GUIs of aeroplanes in Java

SELECTED COURSE PROJECTS

- Temporal model for Enron email dataset
Description: The e-mail database for the Enron Corp. linked to the prosecution of a number of its senior executives poses an interesting challenge for researchers interested in network modeling. In this project, we extend the mixed membership stochastic blockmodel (MMSB) approach to the temporal models that can discover meaningful relationship between the key people in Enron Corporation in terms of group membership.
Winner of the Instructors' choice award for the Graphical Models class, 2008
- Detecting Workload Changes in a Sequence of Request Flow Graphs
Description: Enterprise-class products, especially distributed systems, are difficult to troubleshoot in the field. This project aims to combine granular instrumentation of a distributed storage system with machine learning and stream mining algorithms to detect workload changes in the systems runtime behavior. We develop an auxiliary subsystem that processes the runtime traces of the main system and alerts for anomalies on the fly. Our method also detects sequential patterns of these traces which would help to compress past data and provide system administrators with information about the normal flow of the system.
- Dimensionality reduction for fMRI data
Description: Functional Magnetic Resonance Imaging (fMRI) is a very powerful instrument to collect data about activity in the human brain. Machine learning methods for classifying the cognitive state of a human subject based on its fMRI data have been applied. Major issues of this kind of learning are (1) data is very sparse (tens of training examples per human subject), (2) noisy and (3) extremely high dimensional (up to 10^5 features). In this project, new feature selection methods are applied among many learning methods and all of them are noted to perform better than using all of the features in training the classifiers.
- Design of 32-bit pipelined processor with reduced instruction set, implemented in Verilog
- File System Design, implemented in C in Linux environment
- Internet Router Simulation, implemented in C in Linux using threads and several kernel structures
- Football League & Bet System database design, web-based implementation in PHP & MySQL
- M@rX: A new Programming Language Design for several Matrix operations, parser implementation in BNF
- RAR: A shut'em up game, use of Object-Orientation and a large functionality of Java Graphics API
- A Napster-like P2P File Sharing program, implemented in Java
- An Ethereal-like Network Packet Sniffer program, implemented in Java

HONORS

- Receiver of the CMU Graduate Student Assembly Conference Funding on August 2008
- Bilkent University High Honor Student for all terms
- Full Scholarship at Bilkent University including tuition and monthly stipend
- Ranked 300th in 2003 National University Entrance Exam in Turkey among over 1 million students
- Ranked 5th in 2000 Science High School Entrance Exam in Turkey among over 300,000 students
- Winner of 2 bronze medals at Bursa Secondary Schools Chess Tournaments in 1996 and 1997

SKILLS & ACTIVITIES

Spoken Languages: Turkish (native), English (fluent), German (intermediate level, 6 courses taken at Bilkent University), Japanese (beginning level, non-credit courses taken at Bilkent University)

Programming Languages: MatLab, Java, C, C++, C#, QT, Visual Basic, SQL, PHP, .NET, Perl, Python, Verilog, Assembly (Intel & MIPS), L^AT_EX

Databases: Oracle, MySql, Microsoft SQL Server

Academic Activities: External reviewer for WOSN and WWW 2008, Web Master for CMU Databases Lab since Spring 2008

Extracurricular Activities: Chess, Ballroom/Latin dancing, Tennis, Biking, Aerobics