ESRA AKBAS

EDUCATION

Florida State University, Tallahassee, Florida   *August 2018*
PostDoct, Computer Science
Advisor: Peixiang Zhao

Florida State University, Tallahassee, Florida   *December 2017*
Ph.D., Computer Science (CGPA 3.90 / 4.00)
Thesis: Community Search and Detection on Large and Dynamic Graphs
Advisor: Peixiang Zhao

Bilkent University, Ankara, Turkey   *July 2012*
M.S., Computer Science (CGPA 4.00 / 4.00)
Thesis: Sentiment Analysis for Turkish Short Text
Advisor: Hakan Ferhatosmanoglu

Tobb University Of Economics And Technology, Ankara, Turkey   *July 2010*
B.S., Computer Science (CGPA 3.74 / 4.00)

RESEARCH INTERESTS

. Data Mining and Management, Big Data

. Graph Mining, Social Network Analysis

. Machine Learning

. Text Mining

PROFESSIONAL EXPERIENCE

Florida State University   August 2013 - December 2017
Graduate Teaching Assistant

· Introduction to Java (Course Instructor)
· Data Structures, Algorithms, and Generic Programming (Recitation Instructor)
· Database Systems (TA, Project advising and grading)
· Advanced Database Systems (TA, Project advising and grading)
· C++ Programming (Recitation Instructor)
· Object Oriented Programming (Recitation Instructor)
· Theory of Computation (TA)
· Clustering: Bridging Theory and Practice(TA)

Florida State University   Jan 2013 - May 2013
Graduate Research Assistant

· Social Recommendation

Bilkent University   Sep 2010-Jun 2012
Graduate Teaching Assistant

· Fundamental Structures of Computer Science (C++ programming)
· Introduction to Machine Learning
· Innovative Product Design and Development

RESEARCH EXPERIENCE

Index based Local Community Search   Feb 2015-present
- Construct an index on a graph based on trussnes of its edges
- Find a local community of given a set of query vertices on a graph efficiently using the constructed index structure

Fingerprint Identification using Topological Data Analysis   Dec 2016-present
- Convert a large fingerprint image data to a small graph data with simplification methods
- Extract the topological features of the graph data using Topological Data Analysis
- Identify distorted fingerprint images with these features using machine learning techniques

Attributed Graph Clustering using An Attribute-aware Graph Embedding   Aug 2014-Jan 2015
- Embed each vertex of a graph into a continuous vector space where the localized structure and attribute information of vertices can be jointly encoded
- Convert the attributed graph clustering problem into the traditional multi-dimensional data clustering

User Characterization for Online Social Networks   Mar 2015-Mar 2016
- Literature review of the studies about to identify, understand, characterize and measure user behaviors in Online Social Networks

Social Network Forensics   Mar 2015-Jan 2016
- Literature review of the social network forensics methods, models, and techniques in the cyber space

Social Recommendation   Jan 2013 - Dec 2013
- Recommender systems based on social networks using matrix factorization

Aspect Based Opinion Mining on Turkish Short Text   Sep 2010 - Jun 2012
- Find topics of Turkish tweets as informal text with topic modeling
- Estimate overall sentiment about these topics with finding the sentiment strength of texts
- Propose new methods for extracting sentiment strength of the text and create new feature type to represent the text
- Time series analysis based on the sentiments of texts

Location Estimation System with Wireless Signal Strength   Jan 2009 - 2010 Jun
- Estimate the location of an object based on the strength of wireless signal received from Access Points in the environment using machine learning methods

PUBLICATIONS

1. **Esra Akbas**, Peixiang Zhao, "*Truss based Community Search: a Truss equivalence Based Indexing Approach*, VLDB, 2017

2. **Esra Akbas**, Peixiang Zhao, "*Attributed Graph Clustering: An Attribute-aware Graph Embedding Approach*, ASONAM, 2017

3. **Esra Akbas**, "*Opinion Mining on Non-English Short Text*", ISMISS, 23rd International Symposium on Methodologies for Intelligent Systems, 2017

4. Umit Karabiyik, Muhammed Canbaz, Ahmet Aksoy , Tayfun Tuna, **Esra Akbas**, Bilal Gonen, Ramazan Aygun, "*A Survey of Social Network Forensics*", Journal of Digital Forensics, Security and Law (JDFCL), Vol. 11 : No. 4 , Article 8, 2017

5. Tayfun Tuna, **Esra Akbas**, Muhammed Canbaz, Ahmet Aksoy, Bilal Gonen, Umit Karabiyik, Ramazan Aygun, *"User Characterization for Online Social Networks"*, Social Network Analysis and Mining, Springer, 6: 104, 2016

6. Necmettin Yildirim, Mehmet Aktas, Seyma Ozcan, **Esra Akbas**, Ahmet Ay, *"Differential DNA level regulation by alternatively designed molecular mechanisms: A mathematical modeling approach"*, In Silico Biology, pp. 1-33, 2016.

7. Mehmet Aktas, **Esra Akbas**, *"Computing the Braid Monodromy of Completely Reducible n-gonal Curves"*, ACM Transactions on Mathematical Software (to appear in ACM - Transactions on Mathematical Software)

8. **Esra Akbas**, Peixiang Zhao, *"Index based Closest Community Search"*, in preparation, 2017

9. **Esra Akbas**, Peixiang Zhao, *"Attributed Graph Clustering: An Attribute-aware Graph Embedding Approach"*, book chapter at EB-ASFAH, 2018

HONORS AND AWARDS

Republic of Turkey Ministry of National Education Full Scholarship, 2012-2016

TUBITAK (The Scientific and Technological Research Council of Turkey) Graduate Education Scholarship, 2010-2012

Class Valedictorian, Tobb University Of Economics And Technology & Bilkent University, Department of Computer Science, Turkey 2009

Full Scholarship, Tobb University Of Economics And Technology 2005-2010

676th student among approximately 1,700,000 students who participated in the national university entrance exam, 2005

Government scholarship, middle and high school, 1998-2005

PROFESSIONAL DEVELOPMENT

Memberships
· Member of Association for Computing Machinery (ACM)
· Member of Society for Industrial and Applied Mathematics (SIAM)
· Member of Association for Academic Advancement Scholars (ASACAD)

Certificates
· Program for Instructional Excellence, FSU PIE certificate, 2015
· Preparing the Future Faculty (PFF) Certificate, In Progress

TECHNICAL SKILLS

Programming Languages:	Java, Python, Matlab, C, C++, R
Scripting Languages:	Php, Asp JavaScript, XML, HTML, CSS, Latex
Software & Tools:	Matlab, MS Visual Studio .NET, Weka
Languages	English, Turkish, German (intermediate)

SERVICE

Academic Service
· Reviewer for IEEE Access

· Reviewer for EB-ASFAHI-2017
· Reviewer for International Journal of Modern Physics B
· Reviewer for the Journal of "Information Systems".
· External reviewer for CIKM '17 conference
· External reviewer for ICDM '11 conference