

Hasan Kurban

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Computer Science Department, Indiana University
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RESEARCH INTERESTS

Data Mining, Machine Learning, Big Data, Data Science

PUBLICATIONS

Journal Articles [Refereed]

J2. Hasan Kurban, Mark Jenne and Mehmet M. Dalkilic: Using data to build a better EM: EM* for big data, *International Journal of Data Science and Analytics (JDSA)*, vol.4, no.2, pp. 83-97, 2017

J1. Mark Jenne, Owen Boberg, Hasan Kurban and Mehmet M. Dalkilic: Studying the Milky Way Galaxy using ParaHeap-k, a parallel heap-based k-means, *Computer*, vol.47, no.9, pp.26-33, 2014

Conference Proceedings [Refereed]

C4. Hasan Kurban, Mehmet M. Dalkilic: A novel approach to optimization of iterative machine learning algorithms: over heap structure, *IEEE International Conference on Big Data (Big Data 2017)*, Boston, MA, USA (to appear)

C3. Hasan Kurban, Mark Jenne and Mehmet M. Dalkilic: EM*: An EM algorithm for Big Data, *IEEE International Conference on Data Science and Advanced Analytics (DSAA'16)*, Montreal, Canada, 2016 (received "Honorable Mention Paper Award", best paper awards)

C2. Hussein Mohsen, Hasan Kurban, Kurt Zimmer, Mark Jenne, Mehmet Dalkilic: Red-RF: Reduced Random Forest for big data using priority voting & dynamic data reduction, *International Congress on Big Data, IEEE BigData Congress 2015*, New York, USA, 2015

C1. Hussein Mohsen, Hasan Kurban, Mark Jenne, Mehmet Dalkilic: A new set of Random Forests with varying dynamic data reduction and voting techniques, *IEEE International Conference on Data Science and Advanced Analytics (DSAA'14)*, Shanghai, China, 2014

Workshop Proceedings [Refereed]

W2. Hasan Kurban, Can Kockan, Mark Jenne and Mehmet M. Dalkilic: Improving Expectation Maximization Algorithm over Stellar Data, *Workshop on Management, Search and Mining of Massive Repositories of Solar and Stellar Astronomy Data*, Boston, MA, USA (under review)

W1. Mark Jenne, Alex Zimmerman, Hasan Kurban, Claudia Johnson and Mehmet M. Dalkilic: Employing Software Engineering Principles to Enhance Management of Climatological Datasets for Coral Reef Analysis, *The 6th International Workshop on Climate Informatics (CI'16)*, Colorado, USA, 2016

Poster Proceedings [Refereed]

P1. Hasan Kurban, Can Kockan, Mark Jenne and Mehmet M. Dalkilic: Case study: clustering big stellar data with EM*, *IEEE/ACM International Conference on Big Data Computing, Applications and Technologies (BDCAT 2017)*, Austin, Texas, USA (to appear)

Book Reviews

B2. *Mastering Social Media Mining with R*, Sharan Kumar Ravindran, 2015, ISBN 1784396311

B1. *Learning Data Mining with R*, Biter Makhabel, 2015, ISBN 1783982101

EDUCATION

Indiana University Bloomington, IN, USA

Ph.D., Computer Science, September 30, 2017

Minor in Statistics

Indiana University Bloomington, IN, USA

M.Sc., Computer Science, May 2012

Inonu University, Malatya, Turkey

B.Sc., Mathematics, June 2008

- INVITED TALKS Invited Talks [Conferences]
- EM*: An EM algorithm for Big Data, IEEE International Conference on Data Science and Advanced Analytics (DSAA'16), Montreal, Canada (10/18/2016)
 - A new set of Random Forests with varying dynamic data reduction and voting techniques, IEEE International Conference on Data Science and Advanced Analytics, Shanghai, China (10/30/2014)
- Invited Talks [Teaching]
- Expectation Maximization Algorithm for clustering, Computer Science Department, Indiana University, Fall 2016
 - Principal Component Analysis, Computer Science Department, Indiana University, Fall 2016
 - Data Structures, Computer Science Department, Indiana University, Spring 2014
 - Ensemble Models, Computer Science Department, Indiana University, Spring 2013
- TEACHING EXPERIENCE
- Visiting Assistant Professor, Computer Science Department, Indiana University Bloomington, USA
- Applied Machine Learning (Graduate), Online Applied Data Mining (Graduate), Fall 2017
- Associate Instructor, Indiana University Bloomington, IN, US
- Worked as an Associate Instructor in the Computer Science Department at Indiana University Bloomington between Aug. 2012 - May 2016. Graded homeworks, exams, weekly quizzes; taught labs; held office hours, weekly help sessions; lectured
- Data Mining (Graduate), Fall 2012, Fall 2013, Spring 2015, Spring 2016
 - Machine Learning (Graduate), Spring 2013
 - Data Structures (Undergraduate/Graduate), Spring 2014
 - Seminar in Computer Science: Data Mining (Undergraduate), Fall 2014, Fall 2015
 - Topics in Algorithms and Computing Theory (Graduate), Fall 2014
 - Real World Data Science (Graduate), Summer 2016: Online class sponsored by Eli Lilly and Company
- Senior Associate Instructor, Indiana University, Bloomington, IN, USA
- Head Associate Instructor (AI). Managed a group of AIs; lectured; designed homeworks; graded homeworks, exams
- Data Mining (Graduate), Fall 2016
 - Introduction to Artificial Intelligence (Graduate), Spring 2017
- PROFESSIONAL EXPERIENCE
- Indiana University Bloomington, IN, USA
- Visiting Assistant Professor, Computer Science Department (Aug. 2017 - Present)
- Turbo Appeal, Chicago IL, USA
- Data Scientist (May 2015 - Aug. 2015): Predictive analytics on valuation of homes; web scraping; stored, processed, analyzed, modeled big data sets
- Contact: Scott Beason, scottmbeason@gmail.com
- Indiana University Bloomington, IN, USA
- Undergraduate Research Mentor (Jan. 2015 - May 2017): Designed data mining research projects for undergraduate students; coached undergraduate students
- Contact: Dr. Lamara D. Warren, ldwarren@indiana.edu
- HONORS AND AWARDS
- Best Paper Awards: Honorable Mention Paper Award, IEEE International Conference on Data Science and Advanced Analytics (DSAA'16), Montreal, Canada, 2016
 - Turkish National Ministry of Education Scholarship (all tuitions, fees, and a stipend): Scholarship awarded to high-achieving Turkish university graduates enabling them to pursue graduate study and research in top-ranked universities abroad, 2009 - Present
 - Computer Science Graduate Fellowship, Indiana University, Bloomington, Aug. 2010 - May 2012
 - Nomination for Associate Instructor of the year: Being nominated for the Computer Science Program Associate Instructor of the year award, 2014-2015, Indiana University Bloomington
 - Nomination for Researcher of the year: Being nominated for the Computer Science Program Researcher of the year award, 2016-2017, Indiana University Bloomington

COMPUTER AND LANGUAGE SKILLS Programming Languages and Skills:
Microsoft Windows, Linux, Mac-OS
Python, R, C / C++, Java, MATLAB, Octave, OpenBUGS, WinBUGS
MySQL, NoSQL, PostgreSQL, SQL Server
Weka, Rattle, Tableau, KNIME
Languages:
English (fluent), Turkish (native)

REFERENCES Available upon request