Salim Malakouti

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Education

PHD. Student in Computer Science (Third Year)
University of Pittsburgh, Pittsburgh, Pennsylvania

Bachelor of Software Engineering,

(in top 10 students out 100)

Professional Experience

Developer and Researcher Internship at Kavande Persian Search Engine (2011)

Investigating to improve PageRank results for Persian webpages on the web by deploying different features from source and target pages such as anchor text's term frequency, role of the section within which the link is found. We extracted features from html tags to classify their role. We trained models to classify roles and affect the coefficient of outlinks in PageRank.

Developer and Researcher at S.O.S RoboCup Rescue Simulation Team (S.O.S.) (2009-2013)

My team and I managed to develop a complete and optimized system for controlling intelligent Multi-Agent systems in disaster environments after earth quakes. We devoted to the team for almost 4 year and today our code's baseline is widely used by new teams in the league from different universities in different countries.

Projects

Clinical Electronic Health Record Outlier Detection on Temporal Data

In this work we focus on developing both Machine Learning algorithms and a distributed scalable infrastructure to build real time alerting system by processing millions of time series information of patients to automatically learn and detect possible mistakes by doctors at ICU sections of UPMC hospitals. We learn models on temporal data extracted from machines, prescriptions of doctor, lab records and etc. to detect anomaly behavior in doctor's behavior for a patient.

User-Impatience

The main goal of this project is to learn user behavior and preferences toward minimizing energy consumption in smart phones. Our work focuses on using Machine Learning techniques toward this manner.

Minimal Temporal Predictive Pattern Mining considering features' causality

We have been able to show that using causal relationships between features in datasets we can drive rules to filter many patterns or prevent generating these patterns. Our early results have shown that the number of these patterns can be significantly reduced in some datasets taking causal relationships into consideration while maintaining decent classification accuracy.

Automatic Student Short Answer Grading

We adapted various NLP techniques for extracting features from students' short answers to automatically grade these answers according to existing reference answers and Using Machine Learning to determine their correctness with 70% accuracy.

Technical & Data Analysis Skills

Development Skills: Java, Python, C++, PHP, Javascript, Node.js, J2EE, Bash Scripting, HTML5, CSS3, Javascript, JQuery, Coffee Script, XML

Databases: MySQL, Cassandra, HBase, DB4O, MapDB, MongoDB

Data Analysis and IR: Matlab, R, Spark, Weka, Nutch, Solr, Hadoop, WordNet

Tools, Frameworks and Platforms: Webapp2, CPhalcon, BackboneJS, Eclipse RCP, JUnit, Apache Server, Tomcat, Jasmine, Wireshark, Webkit, OSGi, Axis2

Operating Systems: Unix/Linux, Mac OS X, Windows

Publications

Salim Malakouti et al., **A Category-Based PageRank Algorithm on Finding Multi-Field Experts in Yahoo! Answers**, 9th International Conference on Virtual Learning, pages 103-110, Bucharest University Press, year 2014/10

Courses

Machine Learning: Density Estimation, Linear/Nonlinear/Logistic Regression, SVM, Neural Networks, Decision Trees, Bayesian Belief Networks, EM, Ensemble Methods

Advanced Machine Learning: MRFs, Monte Carlo Methods, PCA, SVD, LDA, Conditional Random Fields, Latent Component Analysis, Spectral Learning, Kernel Learning, Active Learning, Multi-label Learning, Transfer Learning, One shot learning, Outlier Detection

Design & Analysis of Algorithms: Time Complexity, Dynamic Programming, Shortest Path, Network Flow, Linear Programming, Approximation and etc.

Foundations of AI: Search, Constrain Satisfaction, Logic, KR and Resolution, Planning and etc.

Intro To Natural Language Programming: N-Grams, Part of Speech Tagging, Parsing, Semantic Analysis, Lexical Semantics, Dialoged and Conversational Agents and etc.

Networks Crowds and Markets: Game Theory, Graph Theory, Auctions, Link Analysis, Information Cascades, Network Effects, Power Laws, Voting Systems and etc.