

Lawsuit Prediction Model for Credit Cards

Predicting legal risk is special and important for banking and finance. Based on real bank credit cardholder information, lawsuit records, complain data, default data and card restriction data sets, we get 42,235,966 distinct client records and 598,431 of them (1.4%) have sued the bank from 2008 to 2013.

During the learning process, several supervised classification algorithms are used to build prediction model such as: C5.0, CHAID, Decision List, Bayesian Network, Neural network, Logistic regression and so on.

The algorithm C5.0 achieve 99.1%, area under ROC curve and 95.63% Recall rate and 18.91% Precision rate on testing data set. The most five important variables in prediction model are: number of inactive cards, indicator whether credit cards have been blocked, number of active cards, age and indicator whether the credit cards are restricted.

Use?	Graph	Model	Build Time (mins)	Max Profit	Max Profit Occurs in (%)	Lift (Top 30%)	Overall Accuracy (%)	No. Fields Used	Area Under Curve
<input checked="" type="checkbox"/>		C5.1	4	1,861,412.718	49	2.075	95.53	26	0.991
<input checked="" type="checkbox"/>		Neu...	72	1,671,285	49	2.048	91.04	27	0.975
<input checked="" type="checkbox"/>		CHA...	1	1,685,802.401	50	2.036	91.404	8	0.974
<input checked="" type="checkbox"/>		Logi...	4	1,509,635	49	2.033	87.026	28	0.949



Feiqi Huang

- Exception Prioritization in Continuous Auditing: A Framework and Experimental Evaluation
- Corporate Disclosure via Social Media
- Text Mining
- Audit Data Standard



Pei Li

Generating Audit Hypotheses Using Exploratory Data Analysis (EDA):

EDA is an approach for data analysis that employs a variety of techniques to maximize insight into a data set and detect anomalies. Audit hypotheses generated with the help of EDA could be more accurate and effective than those generated merely based on auditors' knowledge and the information they have collected.



TING
SUN

Projects:

- Audit Data Standard (ADS)
- Verbal Protocol Analysis
- Information Search Optimization
- Reduction of False Positives

Interests:

- Data Visualization
- Anomaly/Fraud Detection



Abdullah
Alawadhi

Research/Project Interests:

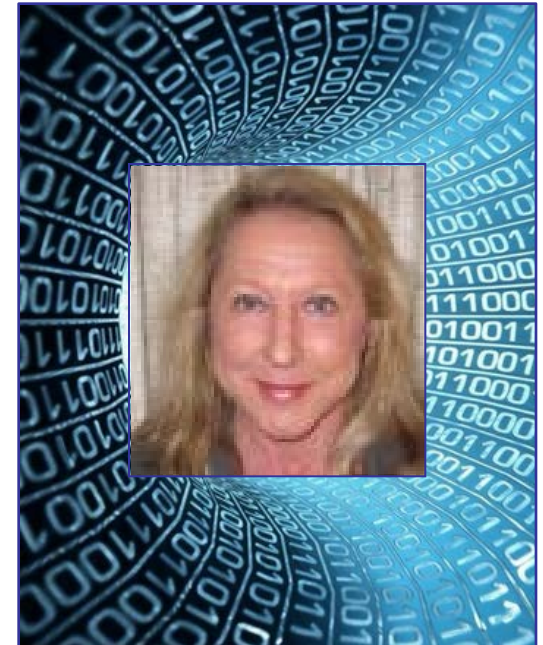
- Continuous Assurance, Continuous Auditing, and Continuous Monitoring
- Data Mining
- Outlier Detection
- Conceptual Database Design
- Off-Balance-Sheet Assets



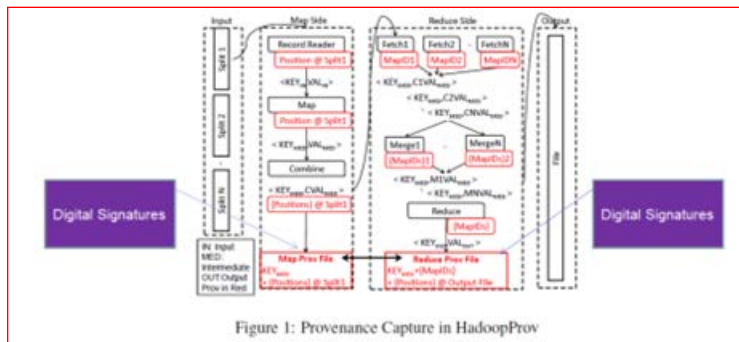
Paul Byrnes

Provenance of Big Data

- Provenance is the origin and lineage of the Big Data
- **BIG DATA = HADOOP**
- Many businesses buy Big Data from third parties; origin not known
- Provenance of Big Data must be secure, if it is Audit Evidence
- Big Data Provenance Black Box:



Deniz
Appelbaum



- Audit Data Standards (ADS)
- Verbal Protocol Analysis



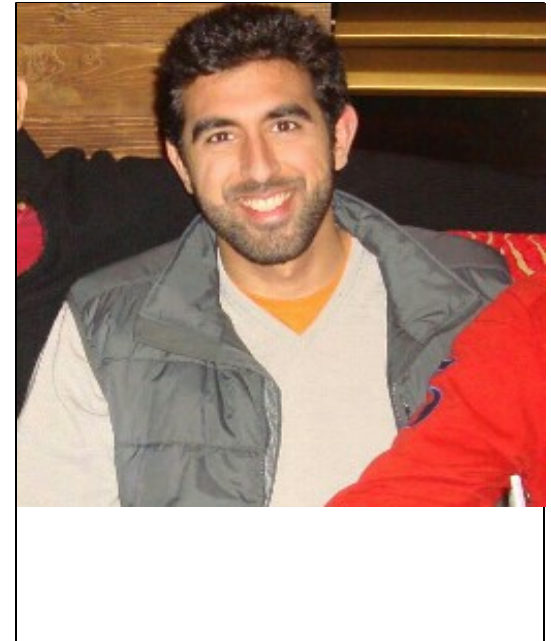
ABDULRAHMA
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ALREFAI

Project:

- Insurance project
- Audit Data Standard (ADS)

Interests:

- Fraud detection
- Internal controls

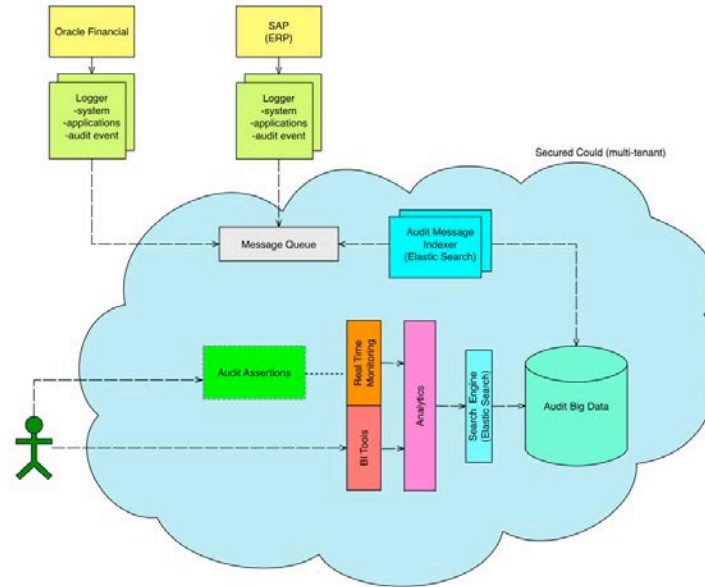


Ahmad
AlQassar

LOG4AUDIT

*Predictive,
preventive,
personalized*

A model that assists an auditor in reaching “conclusions through valid reasoning” by analyzing exact set of events.



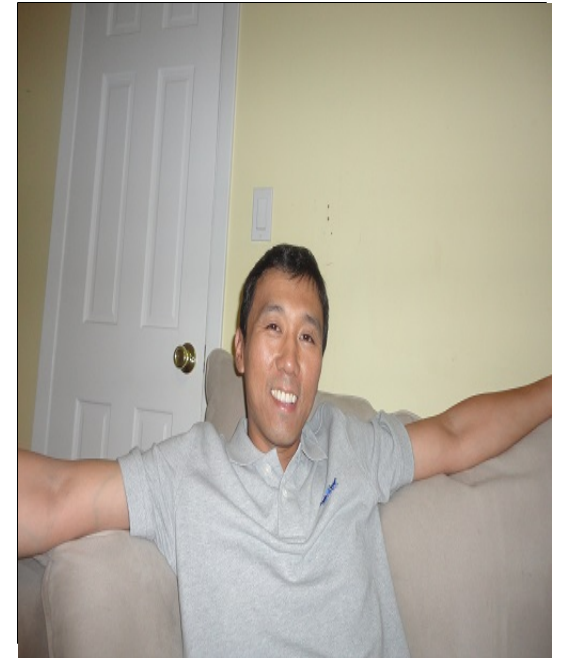
Research Interests:

- Continuous Audit and Monitoring,
- Process Mining,
- Text Mining,
- Data Analytics



Tatiana
Gershberg

- Continuous Risk Monitoring
- Business Risk Audit
- Social Media Analysis
- Text Analysis



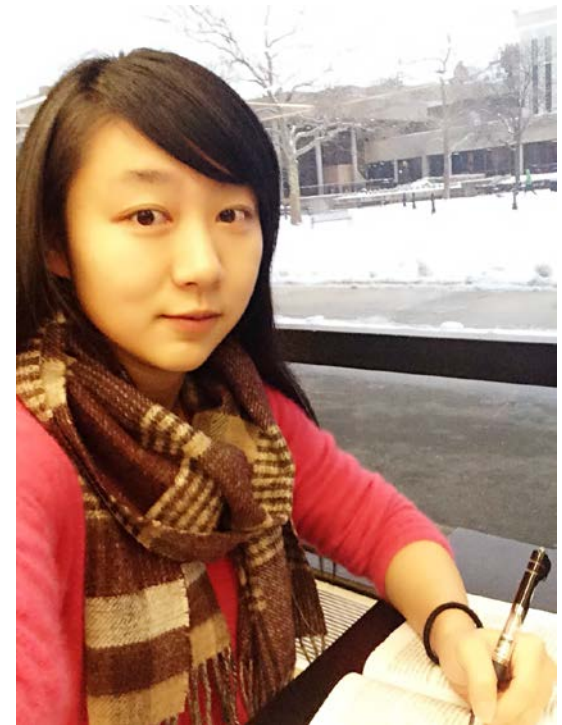
Daehyun
Moon

- 1. Gov. Data Analytic:**
 - Exploratory Data Analysis
 - Clustering
 - Visualization
- 2. Rule-Based System** for Detecting Gov. Financial Data Errors and Anomalies
- 3. Text Mining** Implementation on Gov. Financial Standards (Sources: Twitters and Online News)
- 4. Artificial Neural Networks** for Muni Bonds Credit Rating Predictive Model



**DESI
ARISANDI**

- Internal Audit Control
- Audit Risk Assessment
- Accounting/Auditing System Automation



Qiao Li

Big data, nonfinancial information, and audit opinions

My research interest is to examine the impact of nonfinancial information on auditor's judgment. In an era of big data, auditors are able to access data that describe the client from different aspects. Information from social media or press coverage, while redundant to some extent, does offer value that is not provided by traditional means. Whether their judgment will be influenced by such factors is both an empirical question and behavioral question. My current research is to link customer satisfaction, one aspect of nonfinancial information, with modified audit opinions using auditor's reporting conservatism.



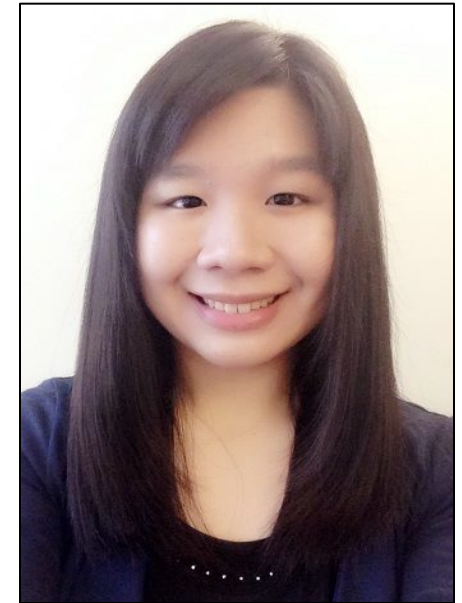
He Li (Stanley)

Text mining of 8-K



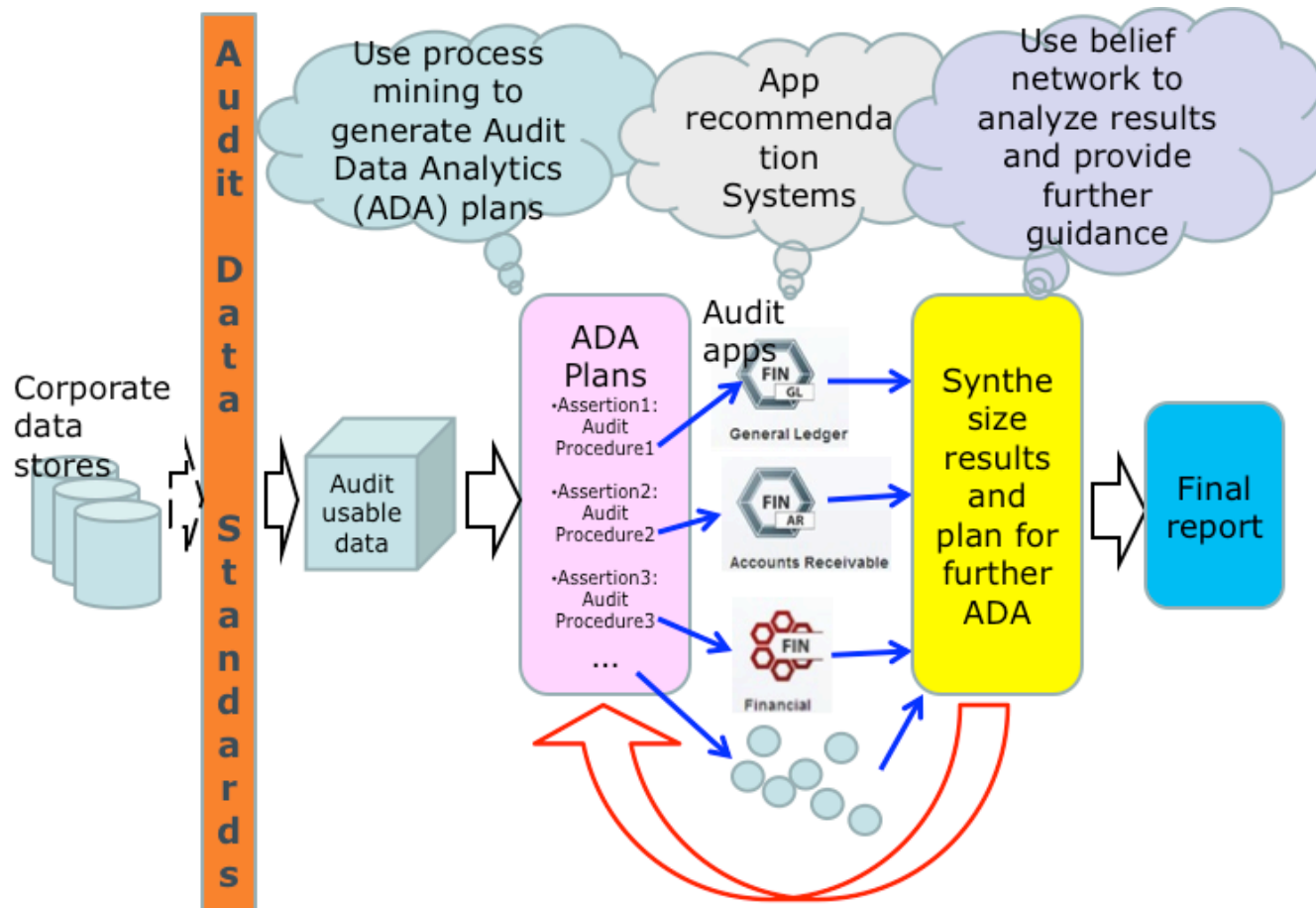
YUE
LIU

- My research interest include process mining and auditing.
- I am currently working on the research project regarding “*apply process mining techniques in auditing analytical procedure to detect potential anomalous transactions which traditional auditing analytical procedure may fail to discover.*”



Tiffany Chiu

Analysis of Analysis: An Ecosystem Assisting Auditors to Use Data Analytics

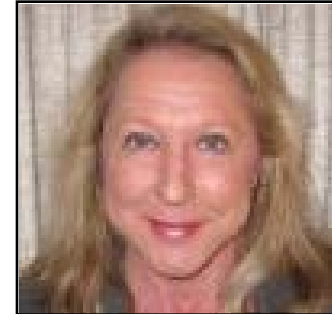


Jun Dai

Designing CA/CM for Not-for-Profit Organizations:

The purpose of the project is to create a benchmark for a CA/CM implementation plan designed by an external third party for Small-to-Medium Sized (SME) organizations, specifically Not-for-Profit (NFP) organizations. The intent of the project is to demonstrate that existing Continuous Audit and Monitoring (CA/CM) tools and techniques can be implemented by third party consultants or advisors to generate appropriate analyses in an SME NFP setting, as an initial stage toward reaching the goals of the proposed Grand Vision. Ultimately, the most ideal situation of CA/CM adoption, the Grand Vision, can fit in the business processes of a SME NFP.

The grand vision of this project encompasses the development of a technology-driven framework that will provide target NFP's with the ability to employ available CA/CM technology in a package that the NFP can manage both financially and technically. The goals of these CA/CM implementations include support for an organization's objectives to provide for effective and efficient operations, reliable and accurate reporting, and compliance with applicable laws and regulations.



Deniz
Appelbaum



Stephen
Kozlowski 17

Audit Ecosystem Concept:

Defined: A holistic approach in the design and development of a technological framework to provide overall management and control of the audit technology components employed, and coordination of the activities of the participants involved

Current research activities include the application of an audit ecosystem concept operating in conjunction with and leveraging the capabilities of a firm's ERP system.

The ecosystem can coordinate both internally-sourced data, such as from the client's ERP system, and exogenous data that may exist in numerous formats to support Continuous Audit and Monitoring analytics. The technology to reconfigure such data into usable form is managed by the ecosystem.

The ecosystem also incorporates the tools to develop a tailored audit plan for the client based on inputs such as the client's industry, the audit firm's prior audit experience, characteristics of the auditor, and the results of initial analyses of the client's data, such as the ERP system logs that may provide insights into the risk factors associated with the client. Once the audit plan is developed the next step is to identify the appropriate applications to execute the audit plan, as well as applications that interpret the results of the audit.

As the audit progresses and audit decision points are reached an audit ecosystem launches appropriate applications to evaluate the audit results as identified at that point and determine how to proceed with the audit. An audit ecosystem continues this process in an iterative fashion until all audit steps have been completed and all decision points addressed.



Stephen
Kozlowski