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## SUMMARY

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<b>DATA MINING</b>	Ten years experience in Data Mining and Mathematical Modeling. Experienced in Customer Relationship Management (CRM) modeling and risk modeling. Strong background in statistics, neural networks, decision trees, clustering, text mining, and web mining. Also experienced in numerous modeling tools including SAS, SAS Enterprise Miner, SPSS/Clementine, S+/Insightful Miner, and WEKA. Masters and Doctoral degrees in Engineering with specialization in data mining methodologies. Also earned MBA with specialization in marketing and finance. Currently working towards additional Masters degree in data mining with expected graduation date in 2007. Completed certificate from the ABA Stonier Graduate School of Banking in 2004.
<b>SOFTWARE ENGINEERING</b>	Seven years designing and coding object oriented software applications. Experienced Java programmer. Earned Sun Certified Java Programmer (SCJP) and Developer (SCJD) certifications. Knowledgeable in Web Page development including HTML and Java Scripts. Undergraduate degree in electrical engineering with all technical electives in software engineering.

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## TECHNICAL SKILLS

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<b>SAS</b>	<ul style="list-style-type: none"><li>• <i>SAS Programming Language</i></li><li>• <i>SAS Enterprise Miner</i></li><li>• <i>SAS Macro Language.</i></li></ul>
<b>OTHER MODELING TOOLS</b>	<ul style="list-style-type: none"><li>• <i>SPSS / Clementine</i></li><li>• <i>S+ / Insightful Miner</i></li><li>• <i>WEKA / Java Programming Language</i></li><li>• <i>Fair Isaac Inform Plus</i></li><li>• <i>PERL</i></li><li>• <i>SQL</i></li></ul>
<b>MATHEMATICAL MODELS</b>	<ul style="list-style-type: none"><li>• <i>Linear / Logistic Regression</i></li><li>• <i>Neural Network</i></li><li>• <i>Decision Trees (Chaid, CART, C5.0)</i></li><li>• <i>Rule Induction / Market Basket Analysis</i></li><li>• <i>Clustering / Segmentation</i></li><li>• <i>Unstructured Text Mining</i></li><li>• <i>Web Mining</i></li></ul>

**MODELING  
APPLICATIONS**

- *Customer Relationship Management (CRM)*
- *Text Mining*
- *Customer Response Models*
- *Retention / Attrition Models*
- *Cross Sell Models*
- *Front End Credit Score Cards*
- *Credit Risk models*
- *Financial Engineering Models*

**JAVA**

- *Four Years Experience, Java Programmer*
- *Sun Certified Java Programmer*
- *Sun Certified Java Developer*

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**EXPERIENCE**

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**2005 – Present**

**PRODUCT MANAGER, RESEARCH AND DEVELOPMENT  
Progressive Insurance; Mayfield, Ohio**

Product Manager and Senior Analyst for Research and Development Group.  
Accomplishments included:

- Devised a method using Self Organizing Maps (SOM) clustering method to infer driving conditions and road types from driving data recorded by onboard TripSense computer chip. Method resulted in the filing of a patent. Utilized SOM Clusters and other driving data to successfully assess driving risk from TripSense data.
- Improved upon current Geo-Smoothing modeling to rate territory risk of drivers based on garage zip code. New methodology took days instead of weeks and improved accuracy.
- Spearheaded initiative to analyze free text from customer surveys and emails using *text-mining* techniques. Text mining initiative resulted in automated classification of customer surveys and emails. Was used to determine that an error on quoting web site was causing customer attrition.

**1999 - 2005**

**VICE PRESIDENT OF ANALYTICS  
SENIOR MODELER / MANAGER  
Key Bank Corporation; Cleveland, Ohio**

**Managerial Duties**

Senior Modeler and VP of Analytics. Worked in managerial role supervising both modeling team and java programmers. Team size consisted of as many as six members. Duties included interfacing with other lines of business within bank including marketing, consumer, credit, business, and investing; acting as project manager; assigning workloads to team members; overseeing the training of new employees; mentoring employee careers; and assessing employee performance. Also, acted as lead programmer on project to re-engineer financial value at risk “VAR” assessment system. Duties included designing Java software architecture and writing Java code to process investment data. Project required knowledge in project management, software design, Java programming, databases, SQL, and financial instruments.

## **Data Mining**

Working as a senior mathematical modeler in the areas of data mining, Customer Relationship Management (CRM), risk modeling, and financial engineering. Duties include building and analyzing data sets utilizing SAS, SAS Enterprise Miner, and other modeling tools. Analysis methodologies include SQL data queries, linear and logistic regression, decision trees, neural networks, market basket analysis, unstructured text mining, web based data mining, clustering, and segmentation. Models developed include:

- Segmentation of Customers Using Demographic and Behavior Data
- Customer Attrition / Retention Models
- Cross Sell / Up Sell Models
- Models to Predict Customer Response to Campaigns
- Front End Credit Risk Scorecards
- Financial Engineering Portfolio Optimization Models
- Econometric Models To Predict Security Price Fluctuations

**1998 - 1999**

### **ARTIFICIAL INTELLIGENCE SPECIALIST Pegasus Technologies; Mentor, Ohio**

#### **Data Mining**

Analyzed data and developed mathematical models using neural networks and statistical analysis for use in industrial process control and optimization. Also conducted customer-training classes to instruct neural network theory and operation of products. Developed neural network utilities in C++ to assist field engineers with process modeling and verification.

**1997 - 1998**

### **SOFTWARE ENGINEER Noteworthy Medical Systems; Cleveland, Ohio**

#### **Java Programmer**

Worked as software engineer on medical records system in Java programming language. Designed and coded appointment scheduler and message system and incorporating both with main system. Also designed and coded lab and radiology order tracking system and incorporated it with main system.

**1992 - 1997**

### **SYSTEMS ENGINEER VICE PRESIDENT Photonics Systems; Toledo, Ohio**

#### **Data Mining**

Acted as Principal Investigator for U.S. Army contract for medical data analysis and the design of a neural network data analysis system to conduct battle field triage. Also wrote technical proposals to the Federal Government including NASA, the U.S. Army, U.S. Navy, and U.S. Air Force for funded Data Mining research.

#### **Software Engineering**

Designed and coded firmware in Assembly and C for plasma panel touch entry displays. Wrote software library in C for graphics emulator.

**1992-1995**

**RESEARCH ASSISTANT**  
**University Of Toledo; Toledo, Ohio**

**Data Mining**

Conducted research in the field of data analysis, data mining, expert systems, and neural networks. Collected, analyzed, and built mathematical models for research grants in the fields of finance, medicine, and industrial materials. Also taught undergraduate engineering classes. Acted as grader and course consultant for advanced undergraduate engineering classes. Received award for Outstanding Graduate Research in Department of Electrical Engineering.

**1990 - 1992**

**SOFTWARE ENGINEER**  
**Loral Defense Systems; Akron, Ohio**

Worked on design team that wrote software specifications for four million line object-oriented Ada program and prototyped structural design of code. Advised on feasibility of Ada design proposals. Designed and prototyped menu tree for maintenance and test department. Acted as system manager on Concurrent 6000 computers running Unix.

**1988 - 1990**

**ELECTRICAL ENGINEER**  
**Naval Aviation Depot; San Diego, California**

Wrote object-oriented simulation software for helicopter based Tactical Navigation (TACNAV) System in Ada, C, and Assembly for IBM PC compatible machines. Wrote user manuals, documented code, and helped write program design specifications. Received Department of the Navy Performance Award in both 1989 and 1990.

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## **EDUCATION**

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**ENGINEERING  
EDUCATION**

**PH.D. ENGINEERING SCIENCE**  
**University of Toledo; 1995**

**M.S. Engineering Science;** University of Toledo; 1988  
**B.S. Electrical Engineering;** University of Toledo; 1987

**Data Mining:** All graduate research and course work concentrated in the field of Data Mining and statistical models. Extensive experience in data acquisition, data preparation, and analysis. Developed mathematical models using logistic regression, neural networks, decision trees, and clustering.

**Computer Engineering:** Undergraduate studies concentrated in the areas of computer engineering and software development.

**Coursework:** Numerous *Statistical Analysis, Neural Networks, Statistical Simulation,* and *software engineering* classes.

**Dissertation:** *Increased Accuracy of Radial Basis Function Neural Networks through the Implementation of Certainty Factors*

**BUSINESS  
EDUCATION**

**M.S. MANAGEMENT  
University of Akron; 1991  
San Diego State University; First Year of Graduate Studies**

Specialized in information and decision support systems applied to marketing and finance applications.

**BANKING  
EDUCATION**

**GRADUATE PROGRAM  
ABA Stonier School of Banking  
Washington DC; 2004**

Certificate from the American Bankers Association (ABA) Graduate School of Banking, an executive management school for the financial industry.

**Capstone Project:** *Mathematical Model to Optimize Performance of "Smart Pay" Overdraft Protection for Demand Deposit Accounts.*

**DATA MINING  
EDUCATION**

**M.S. DATA MINING  
Central Connecticut State University  
New Britain, CT; Expected Graduation 2008**

Currently pursuing Masters Degree in Data Mining Program. Degree focuses on applying statistical and mathematical modeling techniques to the field of data mining. Modeling techniques include decision trees, rule induction, linear and logistic regression, clustering, neural networks, market basket analysis, bayesian, unstructured text mining, and web mining.

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**PATENT**

- **CLASSIFICATION SYSTEM PROCESSING USAGE BASED DATA**  
Priority Document Filed October 8, 2006.  
Listed as Lead Inventor.

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**REGISTRATION AND CERTIFICATION**

- REGISTERED PROFESSIONAL ENGINEER (P.E. LICENSE) State of Ohio since 1993, #E-57003.
- SUN CERTIFIED PROGRAMMER FOR JAVA 2 PLATFORM (SCJP)
- SUN CERTIFIED DEVELOPER FOR JAVA 2 PLATFORM (SCJD)
- SECURITY CLEARANCE: SECRET 1988-1991