

## RANDY KERBER

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### EXPERIENCE

#### Medco Health Solutions, Inc.

November, 2004 to present

**Technical Specialist**, Knowledge & Information Products. Responsible for application of semantic, optimization, and artificial intelligence technologies to the management and delivery of prescription drug benefit programs. Defining domain models for enterprise applications. Creating software prototypes to demonstrate use of optimization approaches to operations problems, such as skills-based task assignment, workforce planning, and customer issue management.

#### Independent Consultant

February, 2001 to November, 2004

**Software Consultant**, various projects: Software development. Data analysis. Development of ontologies (semantic models). Design and development of a visual programming environment, for complex data mining tasks, that integrates multiple data manipulation and analysis components into a single environment, with which a user constructs and executes *data flow* programs.

#### MyRaptor.com

April, 2000 to November, 2000

**Director, R & D**. Responsible for design and implementation of a Bid Recommendation Engine for an internet startup. The software provided customers with recommendations for placing bids with on-line travel auction sites, such as Priceline and Hotwire, by collecting and analyzing airline fare and flight data.

#### Inference Corporation

September, 1999 to April, 2000 (as self-employed consultant)

**Consultant**. Design and implementation of data mining tools and processes, adding personalization and target-selling capabilities to their customer website management product.

#### Teradata / NCR

Data Mining Lab, San Diego, CA

December, 1998 to September, 1999 (employee)

**Data mining specialist**. Performed analytics on large data warehouses for Teradata's data warehouse customers. Designed algorithms to include in the Teradata Warehouse Miner data mining product.

Co-author of CRISP-DM, the most widely-adopted data mining process model ([http://www.kdnuggets.com/polls/2007/data\\_mining\\_methodology.htm](http://www.kdnuggets.com/polls/2007/data_mining_methodology.htm)), which guides data mining practitioners through the stages of a data analysis project (final report: <http://www.crisp-dm.org/CRISPWP-0800.pdf>).

## **NCR**

Human Interface Technology Center, Atlanta, GA  
June, 1995 to December, 1996 (as self-employed consultant)  
December, 1996 to December, 1998 (as employee)

**Project Leader**, industry analyst, data analytics, research prototyping.

Performed a study of the data mining tool marketplace to identify promising tools and companies for partnership and referral agreements.

Analyzed grocery store sales data to predict effect of pricing and promotion strategies on sales volume and profit.

Created a Case-Based Reasoning (CBR) prototype, for retrieval of patient cases with relevant similarity to the presenting case, as part of the National Medical Practices Knowledge Bank project, supported by NIST, Allegheny General Hospitals, and Carnegie Mellon University.

## **Statis, Inc.**

Sebastopol, CA  
December, 1998 to April, 1999 (contractor)

**Research prototyping**. Implemented a software tool to demonstrate a statistical analysis technique known as "Bootstrapping". This tool was the prototype of a phase I SBIR (Small Business Innovation Research) project.

## **Lockheed Missiles and Space Company**

Artificial Intelligence Center, Palo Alto, California  
August, 1986 to June, 1995

**Research Scientist**. Conduct research in machine learning, Bayesian inference, knowledge representation (semantics, ontologies), case-based reasoning. Tasks include defining scope of research projects, developing prototypes to test and demonstrate capabilities, present and publish results, and pursue funding from government research funding organizations.

The machine learning research resulted in the creation of a rule induction application (generates predictive rules from data), which Lockheed decided to make the basis of a commercialization effort. The tool, called Recon™, was purchased by two mutual fund customers for use in analyzing equity portfolios.

## **Hughes Aircraft Company**

Artificial Intelligence Center, Calabasas, California  
May, 1985 to Sept, 1985

**Research Intern**. Artificial Intelligence and cooperating software agents.

## **University of Southern California / Information Sciences Institute**

Marina del Rey, California  
October, 1984 to April, 1985.

**Research Assistant**. Machine learning, model-driven software generation.

## EDUCATION

M.S. Computer Engineering  
University of Southern California, 1986

B.S. Computer Science  
University of Minnesota, 1983

## RESEARCH PUBLICATIONS

- Kerber, R., Beck, H., Anand, T., Smart, B. (1998). Active Templates: Comprehensive Support for the Knowledge Discovery Process. In *Fourth Intl. Conference on Knowledge Discovery and Data Mining*.
- John, G., Miller, P., Kerber, R. (1996). Stock selection using rule induction. In *IEEE Expert: Intelligent Systems & their Applications*, vol.11.5, Oct. 1996.
- Kerber, R., Livezey, B., Simoudis, E. (1995). A hybrid system for data mining. In *Intelligent Hybrid Systems* (book chapter).
- Simoudis, E., Livezey, B., Kerber, R. (1994). Integrating inductive and deductive reasoning for database mining. In *Proceedings of the AAAI-94 Workshop on Knowledge Discovery in Databases*.
- Kerber, R. (1992). ChiMerge: Discretization of numeric attributes. In *Proceedings of the Tenth National Conference on Artificial Intelligence (AAAI-92)*.
- Kerber, R. (1991). Learning classification rules from examples. In *Proceedings of the AAAI-91 Workshop on Knowledge Discovery in Databases*.
- Barletta, R., Kerber, R. (1989). Improving explanation-based indexing with empirical learning. In *Proceedings of the Sixth International Workshop on Machine Learning*.
- Kerber, R. (1988). Using a generalization hierarchy to learn from examples. In *Proceedings of the Fifth International Conference on Machine Learning*.

## PATENTS

- Tate, B.; Pricer, J.; Anand, T.; Kerber, R. SQL-based Analytic Algorithm for Association. U.S. Patent #6,611,829, awarded Aug 26, 2003.
- Cunningham, S.; Kerber, R. Method and Apparatus for Optimizing Promotional Sale of Products Based Upon Historical Data. U.S. Patent #6,029,139, awarded Feb 22, 2000.
- Simoudis, E.; Livezey, B., Kerber, R. Method for Generating Predictive Models in a Computer System. U.S. Patent #5,692,107, awarded Nov. 25, 1997.