

RANDY KERBER

408-621-3684 randy@randykerber.com

SENIOR SOFTWARE TECHNOLOGIST

QUALIFICATIONS

15+ years of experience in research and application of advanced software technologies, including the fields of semantic technologies, analytics (machine learning, data mining) optimization, and artificial intelligence, in aerospace, computer services, internet, and health services company environments.

Distinguishing competencies include:

- Identifying high-value business problems that would benefit from innovation
- Identification of appropriate software development approaches and solutions
- Developing proofs of concept to demonstrate feasibility and potential utility
- Application of semantic, optimization, and artificial intelligence technologies to address business needs and client expectations
- Collaboration with business and technology partners to develop state-of-the art applications and outcomes

PROFESSIONAL EXPERIENCE

Independent, San Jose, CA 2008 to present

Software Technology Consultant

- Implementation of software product (Visual Ontology Modeler, Sandpiper Software, Inc) for editing and management of ontologies (semantic models).

Medco Health Solutions, Inc., San Jose, CA 2004 to 2008

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.

- Defined semantic domain models to enable the subsequent development of enterprise applications.
- Created software prototypes to demonstrate use of optimization approaches to operations problems including skills-based task assignment, workforce planning, and customer issue management.
- Implemented core algorithm for routing of prescription drug problems to personnel with appropriate skills.

Independent, San Jose, CA 2001 to 2004

Software Technology Consultant

- Developed ontologies for organizing the structure of health benefit plans.
- Designed and developed a visual programming environment for complex data mining tasks, that integrated multiple data manipulation and analysis components into a single environment, enabling a user to construct, execute and repeat complex *data flow* programs.
- Designed a software tool for gathering and consolidating information about status and activities of corporate executives.

MyRaptor.com, San Francisco, CA 2000

Director, R & D.

Responsible for design and implementation of a Bid Recommendation Engine for an internet startup.

- Developed software that provided 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, Novato, CA 1999 to 2000

Senior Software Consultant

Designed and implemented data mining tools and processes, adding personalization and target-selling capabilities to their customer website management product.

Teradata / NCR

1995 to 1999

Data Mining Specialist, Data Mining Lab, San Diego, CA

- Performed analytics on large data warehouses for Teradata's data warehouse customers, creating statistical models to assess customer value and targeted marketing of products and services.
- 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), which guides data mining practitioners through the stages of a data analysis project (final report: <http://www.crisp-dm.org/CRISPWP-0800.pdf>).

Project Leader, Human Interface Technology Center, Atlanta, GA

- Performed a study of the early 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

1998 to 1999

Research Prototyping (Consultant)

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, CA 1986 to 1995**Research Scientist**

Conducted research in machine learning, Bayesian inference, knowledge representation (semantics, ontologies), and case-based reasoning. Defined scope of research projects, developed prototypes to test and demonstrate capabilities, presented and published results, and pursued funding from government research funding organizations.

- Created rule induction application (generates predictive rules from data), which Lockheed made the basis of a commercialization effort. The tool, called Recon™, was purchased by two mutual fund customers for use in analyzing equity portfolios.

OTHER PROFESSIONAL EXPERIENCE

University of Southern California / Information Sciences Institute, Marina del Rey, California

Research Assistant

- Machine learning, model-driven software generation.

EDUCATION

M.S. Computer Engineering, University of Southern California

B.S. Computer Science, University of Minnesota

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.