

Randy Calistri-Yeh, Ph.D.

EXECUTIVE SUMMARY

Over fifteen years experience designing and building *pragmatic intelligent systems* in academic, corporate research, and commercial settings. Over ten years experience leading multi-site software teams and subcontractors ranging from 2-25 scientists, engineers, and analysts. Proven track record of *transforming innovative research into commercial products*. Excellent abilities in innovation, design, management, strategic analysis, planning, and communication at all levels.

Research interests include **search engines** (information retrieval, natural language, text analysis, multilingual / cross-lingual search), **data mining** (classification, clustering, knowledge extraction, statistical & probabilistic reasoning, text mining), and **heuristics** (personalization, user modeling, intelligent architectures & interfaces, plan recognition & planning).

PROFESSIONAL EXPERIENCE

Waterfront Media / Everyday Health, Brooklyn NY

Senior Director of Search Technology

Sep 2009 – Present

Ask.com, Edison NJ

Senior Director of Context Mining & Content Management
Director of Context Mining

Jun 2008 – May 2009
Jun 2006 – Jun 2008

Responsibilities include search heuristics for billions of web pages and images, personalization for millions of users, content classification & quality analysis, vertical search optimization, revenue optimization, and tools for user productivity and back-end analysis.

Directed up to 25 people on 3 continents. Mentored other managers, worked closely with other business units and partner companies.

Guided projects from initial research prototypes to launched products resulting in significant increase in site traffic and company revenue. Initiated and led internal research efforts on personalized search experience and automatic evaluation of user satisfaction. Many projects are proprietary/confidential, but live products from my teams can be seen on:

- www.ask.com (Zoom related search with path-based personalization, spell checker, web results with geo-biased personalization, triggering & content for specialized vertical search, major components of ranking)
- www.dictionary.com (Related search, crossword solver)
- www.rushmoredrive.com (customized search for black community)

TextWise / Manning & Napier Information Services, Rochester NY**Director of Science****Aug 2000- May 2006**

Reported directly to CEO/CTO. Responsible for all science/research decisions and overall science direction of the company. Provided technical management and leadership for a geographically distributed team of up to 11 scientists, linguists, and analysts. Involved in all aspects of project planning, strategy, proposal writing, and customer presentations. Major projects include:

[Semantic SignaturesSM](#) contextual advertising delivers highly relevant ads to any webpage in real time (commercial product). Principal inventor of the underlying Trainable Semantic Vector technology. Articulated product vision and concrete path from raw technology to best-in-industry commercial product. Responsible for strategic research and planning of next-generation product. Responsible for all aspects of system accuracy. Results significantly outperformed all competitors and led directly to two independent 8-figure letters of intent from potential acquirers.

[CINDOR](#) cross-language search allows English searchers to retrieve relevant documents in Arabic (government product). Led science effort to design, prototype, and apply large-scale text data mining tools to automate construction of an English-Arabic computational semantic lexicon for query translation. The resulting lexicon was constructed automatically, with production and validation time >40x faster than alternate techniques. Close interaction with both academic and industrial subcontracts.

[ContentTailor / ShrinkText](#) provides adaptable text display for small-screen wireless devices (commercial prototype). Led science effort to invent new method for readable text compression summarization and to customize third-party text summarization. This was in the early days of wireless text, when SMS was still new and screens were extremely small.

Head of Advanced Technology**Jul 1998 - Aug 2000**

Responsible for research and development of new technology to support the next generation of company products and services. Managed a distributed team of 4 scientists and made direct contributions to projects. Co-inventor of our core research result: Trainable Semantic Vectors (TSV), a new method for domain-trainable semantic indexing of text. This invention has resulted in 4 issued patents and 5 published patent applications. My team used applied TSV to several short-term commercial spin-offs including subject-based document retrieval, real-time clustering and classification, machine learning, auto-generated trainable custom thesaurus, and an automatic query expander for a natural-language search engine.

Computer Scientist**May 1996 - Jul1998**

Principal architect and implementer of the processing system of MAPIT and PatentMiner, the first commercial natural-language data mining systems that search and analyze millions of patents in real time. Designed and implemented the indexing module, query processing module, visualization tools, and overall system architecture (co-inventor on 1 issued patent for this technology). Built working prototype with live data in 5 days; first paying customer in 6 months. Designed and implemented distributed hardware configuration for fault-tolerant real-time search (50% cheaper and 300% faster than original). Met with customers for initial marketing demos, user training sessions, and

requirements gathering for custom features. Evaluated and designed integration with 3rd-party expert system for automated reasoning of patent analysis.

Odyssey Research Associates, Ithaca NY

Manager, Artificial Intelligence Group

Jan 1993 - Mar 1996

Project manager and principal investigator of a three-year government contract with Cornell University and the University of Iowa to build an intelligent planning architecture using techniques from planning, scheduling, machine learning, and distributed computing. Successfully delivered both innovative research breakthroughs and practical solutions to a specific customer problem in large-scale transportation scheduling.

Computer Scientist

May 1990 - Jan 1993

Created blackboard architecture design for a passive radar system. Implemented Bayesian belief network to diagnose radio faults. Designed and implemented new method of archiving security audit messages for secure distributed operating system. Designed and implemented network monitoring system to simulate Navy communications traffic, calculate network statistics, archive and replay audit trails, and manage multiple synchronous distributed graphical displays.

EDUCATION

Ph.D., Brown University, Providence RI

Department of Computer Science, March 1990

Advisor: Eugene Charniak

Title: "Classifying and Detecting Plan-Based Misconceptions for Robust Plan Recognition"

Sc.M., Brown University, Providence RI

Department of Computer Science, May 1988

M.S., State University of New York at Albany, Albany NY

Department of Computer Science, May 1987

Advisor: Mira Balaban

Title: "OPUS: A Natural Language Interface for Operating Systems"

B.S. *summa cum laude*, State University of New York at Albany, Albany NY

Department of Computer Science, Department of Mathematics, May 1986

Minors: German, Russian, Music, and Statistics

AWARDS

Outstanding performance award, Manning & Napier Information Services, 1997

President's Award for Undergraduate Research, SUNY-Albany, 1986

Elected to Phi Beta Kappa academic honor society, 1985

COMMUNITY SERVICE

Volunteer career mentor at MentorNet, 2008-present.

Board of Directors, Finger Lakes Symphony Orchestra, 1997-2004.

Organizer for IJCAI Plan Recognition Workshop, 1989.

Reviewer for Computational Linguistics, IEEE Conference on Tools for Artificial Intelligence, IEEE Transactions on Systems Man and Cybernetics, International Journal of Plan Recognition and Artificial Intelligence.

Member of AAAI, ACL, ACM, IEEE Computer Society, Sigma Xi.

PERSONAL INFORMATION

Classical [cellist](#), composer, and [arranger](#).

US Citizen.

PUBLICATIONS

(* Note that most work at both Ask.com and TextWise/MNIS is proprietary and therefore unpublished.)

WORKSHOP, CONFERENCE, AND JOURNAL PAPERS

1. N. Habash, C. Mah, S. Imran, R. Calistri-Yeh, and P. Sheridan, "[Design, Construction and Validation of an Arabic-English Conceptual Interlingua for Cross-language Information Retrieval.](#)" In *Proc. 5th International Conference on Language Resources and Evaluation (LREC-2006)*, 107-112, Genoa, Italy, 2006.
2. R.J. Calistri-Yeh, A.M. Segre, and D. Sturgill, "[The Peaks and Valleys of ALPS: An Adaptive Learning and Planning System for Transportation Scheduling.](#)" In *Advanced*

Planning Technology: Technological Achievements of the ARPA/Rome Laboratory Planning Initiative (ARPI-96), 89-96, AAAI Press, May 1996.

3. R.J. Calistri-Yeh and A.M. Segre, "ALPS: An Adaptive Learning and Planning System." In *Proc. TECOM Artificial Intelligence Technology Symposium*, 309-326, Aberdeen, MD, September 1994.
4. R.J. Calistri-Yeh, "[Applying Blackboard Techniques to Real-Time Signal Processing and Multimedia Network Management.](#)" In *Proc. 7th Int'l Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems (IEA/AIE-94)*, 593-599, Austin, TX, June 1994.
5. R.J. Calistri-Yeh and A.M. Segre, "[The Design of ALPS: An Adaptive Learning and Planning System.](#)" In *Proc. 2nd Int'l Conference on Artificial Intelligence Planning Systems (AIPS-94)*, 207-212, Chicago, IL, June 1994.
6. R.J. Calistri-Yeh, "[Iterative Strengthening: An Algorithm for Generating Anytime Optimal Plans.](#)" In *Proc. 6th Int'l Conference on Tools with Artificial Intelligence (TAI-94)*, 728-731, New Orleans, LA, November 1994. Also appears in *Proc. ARPA / Rome Laboratory Knowledge Based Planning and Scheduling Initiative Workshop (ARPI-94)*, 3-13, Tucson, AZ, February 1994.
7. R.J. Calistri-Yeh, "[Utilizing User Models to Handle Ambiguity in Robust Plan Recognition.](#)" In *User Modeling and User-Adapted Interaction: An International Journal*, 1(4):289-322, 1991.
8. R.J. Calistri, "[Classifying and Detecting Plan-Based Misconceptions for Robust Plan Recognition.](#)" In *AI Magazine*, 12(3), 34-35, AAAI Press, Fall 1991.
9. R.J. Calistri, "Plan Recognition in the Presence of User Misconceptions." In *Proc. IJCAI Plan Recognition Workshop*, Detroit, MI, 1989.
10. R.J. Calistri, "The Perfect User Assumption in User Interfaces." In *Proc. IJCAI Intelligent Interface Workshop*, Detroit, MI, 1989.
11. R.J. Calistri, "A Modified A* Algorithm for Robust Plan Recognition." In *Proc. IEEE Workshop on Tools for Artificial Intelligence (TAI-89)*, Fairfax, VA, 1989.
12. R.J. Calistri and H.J. Kallman, "DRT/***: Programs to Administer and Score the Diagnostic Rhyme Test." In *Behavior Research Methods, Instruments, & Computers*, 18(1):57-58, 1986.

BOOK CHAPTERS

1. R.J. Calistri-Yeh, "An A* Approach to Robust Plan Recognition for Intelligent Interfaces." In N.G. Bourbakis, ed., *Applications of Learning and Planning Methods*, vol. 26 of *World Scientific Series in Computer Science*, 227-251, Teaneck, NJ, 1991.

ISSUED PATENTS

1. R.J. Calistri-Yeh, B. Yuan, G.B. Osborne, and D.L. Snyder, "Construction of Trainable Semantic Vectors and Clustering, Classification, and Searching using Trainable Semantic Vectors." [US Patent #7,444,356](#), October 2008.

2. R.J. Calistri-Yeh, B. Yuan, G.B. Osborne, and D.L. Snyder, "Construction of Trainable Semantic Vectors and Clustering, Classification, and Searching using Trainable Semantic Vectors." [US Patent #7,406,456](#), July 2008.
3. R.J. Calistri-Yeh, B. Yuan, G.B. Osborne, and D.L. Snyder, "Construction of Trainable Semantic Vectors and Clustering, Classification, and Searching using Trainable Semantic Vectors." [US Patent #7,299,247](#), November 2007.
4. R.J. Calistri-Yeh, B. Yuan, G.B. Osborne, and D.L. Snyder, "Construction of Trainable Semantic Vectors and Clustering, Classification, and Searching using Trainable Semantic Vectors." [US Patent #6,751,621](#), June 2004.
5. D.L. Snyder and R.J. Calistri-Yeh, "Management and Analysis of Document Information Text." [US Patent #6,038,561](#), March 2000.

PUBLISHED PATENT APPLICATIONS

1. R.J. Calistri-Yeh, B. Yuan, G.B. Osborne, and D.L. Snyder, "Construction of Trainable Semantic Vectors and Clustering, Classification, and Searching using Trainable Semantic Vectors." [US Patent Application #2008/0281814](#), November 2008.
2. R.J. Calistri-Yeh, W. Ruan, C.P. Mah, M.L. Howatt, M.E. McKenna, and M.J. Forrester, "Advertisement Placement Method and System Using Semantic Analysis." [US Patent Application #2005/0216516](#), September 2005.
3. R.J. Calistri-Yeh, B. Yuan, G.B. Osborne, and D.L. Snyder, "Construction of Trainable Semantic Vectors and Clustering, Classification, and Searching using Trainable Semantic Vectors." [US Patent Application #2004/0199546](#), October 2004.
4. R.J. Calistri-Yeh, B. Yuan, G.B. Osborne, and D.L. Snyder, "Construction of Trainable Semantic Vectors and Clustering, Classification, and Searching using Trainable Semantic Vectors." [US Patent Application #2004/0199505](#), October 2004.
5. R.J. Calistri-Yeh, B. Yuan, G.B. Osborne, and D.L. Snyder, "Construction of Trainable Semantic Vectors and Clustering, Classification, and Searching using Trainable Semantic Vectors." [US Patent Application #2004/0193414](#), September 2004.

OTHER PAPERS

1. R.J. Calistri-Yeh and A.M. Segre, "[ALPS: An Adaptive Learning and Planning System.](#)" Rome Laboratory Technical Report RL-TR-96-225, 1997.
2. Y. Zhu and R.J. Calistri-Yeh, "Iterative Plan Repair in ALPS." Technical Report TM-95-0067, ORA, Ithaca, NY, September 1995.
3. R.J. Calistri, "Classifying and Detecting Plan-Based Misconceptions for Robust Plan Recognition." Ph.D. dissertation, Department of Computer Science, Brown University, Providence, RI, May, 1990.