

CHRISTOPHER K. RIESBECK

CURRICULUM VITA

Work: Electrical Engineering and Computer Science
Northwestern University
2133 Sheridan Rd
Evanston, IL 60208
(847) 491-7279

Home: 2917 Crabtree Lane
Wilmette, IL 60091

(847) 251-8019

CURRENT POSITIONS:

Associate Professor
Electrical Engineering and Computer Science
Associate Professor (courtesy), Learning Sciences

Vice President, Acumenical, Inc.
Senior Technical Advisor, Socratic Arts, Inc.

EDUCATION:

PhD 1974, Stanford University, computer science
MA 1972, Stanford University, computer science
BA 1969, Alfred University, mathematics

AWARDS:

1993: Fellow of the American Association for Artificial Intelligence
1989/90: McCormick School of Engineering and Applied Sciences Faculty Honor Roll

PROFESSIONAL ORGANIZATIONS:

American Association for Artificial Intelligence
American Society for Engineering Education
Association for Computing Machinery
IEEE Computer Society

TEACHING EXPERIENCE:

Courses taught multiple times at Northwestern:
Software Project Management
Agile Software Development
Artificial Intelligence Programming
NUvention Web+Media
Introduction to Artificial Intelligence
Data Structures and Data Management

Introduction to Computer Systems
Fundamentals of Computer Programming I
Fundamentals of Computer Programming II
Design of Learning Environments
Data Management and Information Processing

PRIOR POSITIONS HELD:

2008-2009: Acting Director, Center for Technology and Social Behavior, Northwestern University
1989–2000: Faculty Fellow, The Institute for the Learning Sciences, Northwestern University
1984–1989: Senior Research Scientist, Computer Science Department, Yale University,
1977–1984: Senior Research Associate, Computer Science Department, Yale University,
1974–1977: Research Associate, Computer Science Department, Yale University, (including one term as Lecturer.)
1973–1974: Research Scholar, Institute for the Study of Semantics and Cognition, Castagnola, Switzerland.

PH.D. STUDENTS:

Kevin Livingston, Northwestern University, 2009
Baba Kofi Weusijana, Northwestern, 2006.
Lin Qiu, Northwestern, 2004.
Christopher Wisdo, Northwestern, 1998.
Wolff Dobson, Northwestern, 1998.
David Foster, Northwestern, 1997.
William Fitzgerald, Northwestern, 1995.
Charles Martin, Yale, 1990
Mark Burstein, Yale, 1985

CONFERENCE PROGRAM COMMITTEES AND REVIEWING:

2013: Reviewer: Intelligent User Interfaces Conference
2013: Reviewer: Cognitive Science Conference
2012: Reviewer: Cognitive Science Conference
2010: Reviewer, International Conference on Engineering and Meta-Engineering
2010: Reviewer, International Multi-Conference on Engineering and Technological Innovation
2004: AAAI-04 Review Committee
1997-2001: Midwest Artificial Intelligence and Cognitive Science Conference
1995: FLAIRS-95: Realistic Natural Language Processing Symposium
1995: Computer Support for Collaborative Learning
1995: International Conference on Case-based Reasoning.
1993: IJCAI93 Workshop on Reuse of designs: an interdisciplinary cognitive approach.
1993: AAAI-93 Workshop on Case-Based Reasoning
1993: AAAI-93 Symposium on Case-Based Reasoning and Information Retrieval.
1991: DARPA Case-based Reasoning Workshop.
1990: Case-based Reasoning Symposium, Stanford, CA.
1989: DARPA Case-Based Reasoning Workshop, Pensacola Beach, FL.
1988: Case-Based Reasoning Workshop, AAAI-88, St. Paul, MN.
1988: DARPA Case-Based Reasoning Workshop, Clearwater Beach, FL.
1985: Organizer, Second Annual Workshop on Theoretical Issues in Conceptual Information Processing, New Haven, CT.

1984: Co-organizer, with J. Kolodner, First Annual Workshop on Theoretical Issues in Conceptual Information Processing, Atlanta, GA.

1982: The 20th Annual Meeting of the Association for Computational Linguistics, Toronto, Canada.

1981: The Seventh International Joint Conference on Artificial Intelligence, Vancouver, B.C.

UNIVERSITY COMMITTEES (2015-2016)

Faculty Distance Learning Workgroup
Searle Center for Teaching Excellence Advisory Board
Northwestern Center for Engineering Education Research

BOOKS:

Inside Case-Based Explanation.

Written and edited by R. Schank, A. Kass, and C. Riesbeck.
Lawrence Erlbaum Associates. (1994).

Inside Case-Based Reasoning.

Written and edited by C. Riesbeck and R. Schank.
Lawrence Erlbaum Associates. (August, 1989).

Artificial Intelligence Programming, Second Edition.

E. Charniak, C. Riesbeck, D. McDermott, and J.R.Meehan.
Lawrence Erlbaum Associates, 1987.

Experience, Memory, and Reasoning.

Edited with Janet L. Kolodner.
Lawrence Erlbaum Associates, 1986.

Inside Computer Understanding.

Written and edited by R. Schank and C. Riesbeck.
Lawrence Erlbaum Associates, 1981.

Artificial Intelligence Programming.

E. Charniak, C. Riesbeck, and D. McDermott.
Lawrence Erlbaum Associates, 1980.

BOOK CHAPTERS:

Riesbeck, C. K. (1996). Case-based teaching and constructivism: Carpenters and tools. In B. G. Wilson (Ed.), *Constructivist learning environments* (pp. 49-61). Englewood Cliffs, NJ: Educational Technology Publications.

Riesbeck, C. and Schank, R.

“From Training to Teaching: Techniques for Case-based ITS.”

In *Intelligent Tutoring Systems: Evolutions in Design*, Burns, H. L., Parlett, J. W. and Luckhardt-Redfield, C. (eds.)

Lawrence Erlbaum Associates, 1991.

Riesbeck, C.K.

“Parsing, Expectation-Driven.”

In S. Shapiro (ed.) *Encyclopedia of Artificial Intelligence*.
John Wiley & Sons, 1987, pp. 696-701.

Riesbeck, C.K.

“From Conceptual Analyzer to Direct Memory Access Parsing: An Overview.”

In N. Sharkey (ed.) *Advances in Cognitive Science 1*.
Ellis Horwood Ltd, Chichester, England. 1986.

Christopher K. Riesbeck and Charles E. Martin.

“Direct Memory Access Parsing.”

Research Report #354.

Computer Science Department, Yale University, January, 1985.

Collected in Kolodner and Riesbeck (eds.), *Experience, Memory, and Reasoning*.
Lawrence Erlbaum Associates, 1986.

Riesbeck, C.K.

“Realistic Language Comprehension.”

In Lehnert, W., and Ringle, M. (eds.) *Strategies in Natural Language Processing*,
Lawrence Erlbaum Associates, 1982.

Portions selected and reprinted in Aitkenhead, A.M. and Slack, J.M. (eds.) *Issues in Cognitive Science*,
an Open University set book,
Lawrence Erlbaum Associates (London), 1985.

Riesbeck, C.K.

“Knowledge Reorganization and Reasoning Style.”

Research Report #270,

Computer Science Department, Yale
University, June, 1983.

Also in a special issue of the *International Journal of Man-Machine Studies*, M.J. Coombs (ed.), and
reprinted in *Developments in Expert Systems*.
Academic Press, New York, 1984.

Riesbeck, C.K.

“Some problems for conceptual analyzers.”

In Wilks. Y, and Sparck-Jones, K. (eds.) *Proceedings of an SERC Workshop on the Automatic Parsing of
Natural Language*, Cognitive Studies Centre Memorandum #10, University of Essex, Essex,
England, 1982.

Collected in K. Sparck Jones and Y. Wilks (eds.), *Automatic Natural Language Parsing*.
Ellis Horwood Ltd, Chichester, England, 1983.

“Representations to aid distributed understanding in a multi-program system.”

In Findler, N. (ed.) *Associative Networks - The Representation and Use of Knowledge in Computer*.
Academic Press, 1979.

“Comprehension by computer: Expectation-based analysis of sentences in context.”

With R. Schank.

Yale University, Technical Report #78. October, 1976.

Also in Levelt and D'Arcais (eds.) *Studies in the perception of language*.
John Wiley & Sons Limited, Chichester, England, 1979.

“An Expectation-driven production system for natural language understanding.”
Workshop on Pattern-Directed Inference Systems, University of
Hawaii, May 1977.
In Waterman, D. A. and Hayes-Roths, F. (ed.s) *Pattern-directed Inference Systems*. Academic Press,
New York, 1978.

JOURNAL ARTICLES:

Rees Lewis, D.G., Easterday, M.W., Harburg, E., Gerber, E.M., Riesbeck, C.K.,
“Overcoming barriers between volunteer professionals advising project-based learning teams with
regulation tools.”
British Journal of Educational Technology, 2017, DOI: 10.1111/bjet.12550 .

Qiu, L., Riesbeck, C. K.
“An Incremental Model for Developing Educational Critiquing Systems: Experiences with the
Java Critiquer.”
Journal of Interactive Learning Research. 19 (1), 2008.

Christopher K. Riesbeck, Lin Qiu, Baba Kofi Weusijana, Joseph T. Walsh, Matthew Parsek.
“Learning Technologies to Foster Critical Reasoning.”
IEEE Engineering in Medicine and Biology Magazine 22(4), 2003.

Slator, B. and Riesbeck, C.
“TaxOps: A Case-Based Advisor.”
International Journal of Expert Systems 4(2), 1991.

Morphis, M. and Riesbeck, C.
“Feminist Ethics and Case-based Reasoning: A Marriage of Purpose.”
The International Journal of Applied Philosophy 5(2), Fall, 1990.

Riesbeck, C.K.
“Are Questions Just Function Calls?”
Questioning Exchange, 2(1), 1988, pp. 17-24.

Riesbeck, C.K.
“A Maze in Graphs”: commentary on “Multiple representations of space underlying behavior,”
by I. Lieblich and M. Arbib,
The Behavioral and Brain Sciences, 5 (4), December, 1982, p. 648.

“You can't miss it: Judging the clarity of directions.”
Cognitive Science, 4(4), 1980.

“Inference and paraphrase by computer.”
With R. Schank, N. Goldman, and C. Rieger.
Journal of the ACM 22, 1975.

CONFERENCE PAPERS:

Resolving References and Identifying Existing Knowledge in a Memory Based Parser.

Livingston, K., and Riesbeck, C. K.

AAAI 2009 Spring Symposium on Learning by Reading and Learning to Read, Stanford University, California, USA, March 23-25, 2009

Integrating Natural Language, Knowledge Representation and Reasoning, and Analogical Processing to Learn by Reading

Forbus, K. D., Riesbeck, C. K., Birnbaum, L., Livingston, K., Sharma, A., Ureel, L.

Twenty-Second Conference on Artificial Intelligence (AAAI-07), Vancouver, British Columbia, Canada, July 22-26, 2007.

All Knowledge All the Time: A Cognitive Science Challenge for Machine Language Comprehension

Livingston, K., and Riesbeck, C. K.

AAAI 2007 Fall Symposium on Cognitive Approaches to NLP, Arlington, Virginia, USA, November 9-11, 2007.

Using Episodic Memory in a Memory Based Parser to Assist Machine Reading.

Livingston, K., and Riesbeck, C. K.

Working notes of the AAAI 2007 Spring Symposium on Machine Reading, Stanford University, March 26-28, 2007 .

“Knowledge acquisition from simplified text.”

Livingston, K. and Riesbeck, C.K.

Proceedings of the 12th International Conference On Intelligent User Interfaces. Honolulu, Hawaii, 2007.

“Authoring Knowledge-based Educational Software: A Use-Driven Feedback-based Approach.”

Qiu, L. and Riesbeck, C.K.

Poceedings of the 10th Annual Global Chinese Conference on Computers in Education (GCCCE), 2006.

“Designing Web-based interactive learning environments for problem-based learning.”

Qiu, L. and Riesbeck, C.K.

Fifth IEEE International Conference on Advanced Learning Technologies (ICALT) 2005.

“The Design for Authoring and Deploying Web-based Interactive Learning Environments.”

Qiu, L., Riesbeck, C. K.

Proceedings of World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA), 2005.

“An Incremental Model for Developing Educational Critiquing Systems: Experiences with the Java Critiquer.”

Qiu, L. and Riesbeck, C.K.

Proceedings of World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA), Switzerland, June 2004.

“Incremental Authoring of Computer-based Interactive Learning Environments for Problem-based Learning.”

Qiu, L. and Riesbeck, C.K.
Proceedings of the 4th IEEE International Conference on Advanced Learning Technologies (ICALT), Finland, 2004.

“A Web-based Interactive Learn-by-doing Environment for Problem-based Learning.”
Qiu, L. and Riesbeck, C.K.
Annual Conference of the American Educational Researchers Association (AERA), San Diego, CA, 2004.

“Making critiquing practical: incremental development of educational critiquing systems.”
Qiu, L. and Riesbeck, C. K.
Proceedings of the 9th international Conference on Intelligent User Interfaces (IUI '04) Madeira, Portugal, 2004.

"Fostering Reflection with Socratic Tutoring Software: Results of Using Inquiry Teaching Strategies with Web-Based HCI Techniques"
Weusijana, Baba Kofi A., Christopher K. Riesbeck, Joseph T. Walsh, Jr.
International Conference for the Learning Sciences (ICLS), Santa Monica, CA, 2004.

“Facilitating Critiquing in Education: The Design and Implementation of the Java Critiquer.”
Qiu, L. and Riesbeck, C. K.
Proceedings of the International Conference on Computers in Education (ICCE), Hong Kong, December 2003.

"Learning Technologies to Foster Critical Reasoning: Focusing on Challenge-Based Learning Activities That Are Effective for Long-Term Learning"
Riesbeck, Christopher K., Lin Qiu, Baba Kofi Weusijana, Joseph T. Walsh, Matthew Parsek.
IEEE Engineering in Medicine and Biology Society, New York, NY (July/August 2003)

“The Design and Implementation of an Engine and Authoring Tool for Web-based Learn-by-doing Environments.”
Qiu, L., Riesbeck, C.K., and Parsek, M.
ED-MEDIA 2003--World Conference on Educational Multimedia, Hypermedia & Telecommunications (2003).

“Analysis of Results of Using a Socratic Web-Based Tutor in an Engineering Laboratory”
Weusijana, B.K., Riesbeck, C.K., and Walsh, J.
Annual Conference of the American Society for Engineering Education. (2003).

"The SASK Mentor Project."
Weusijana, B.K., Riesbeck, C.K., and Walsh, J.
EdMedia Conference, Denver. (2002).

"Enriching Students' Laboratory Experience: Using Software and Socratic Methods."
Weusijana, B.K., Riesbeck, C.K., and Walsh, J.
Annual Conference of the American Society for Engineering Education, Montreal. (2002).

- “Open Goal-Based Scenarios: An Architecture for Hybrid Learning Environments.”
Qiu, L. and Riesbeck, C. K.
Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education (E-Learn), Montreal, Canada, October 2002.
- "Indie: A Software Tool for Investigate and Decide Simulations." (poster)
Qiu, L., Riesbeck, C.K., Parsek, M.
Annual Conference of the American Educational Research Association, New Orleans. (2002).
- "Designing A Socratic Tutor for a Bioengineering Lab."
Weusijana, B.K., Riesbeck, C.K., and Walsh, J. Annual Conference of the American Educational Research Association, New Orleans. (2002).
- "Authorable Critiquing for Intelligent Educational Systems."
C. Riesbeck and W. Dobson.
Proceedings of *Intelligent User Interfaces* (IUI-98), San Francisco. (1998).
- "Tools for Incremental Development of Educational Software Interfaces."
W. Dobson and C. Riesbeck.
Conference on Human Factors in Computing Systems (CHI-98), Los Angeles. (1998).
- “Getting down to cases: Case-based reasoning and feminist methodologies.”
Maxine R. Morphis and Christopher K. Riesbeck
Sixth International Computing and Philosophy Conference, Southern Connecticut State University, August, 1991.
- Riesbeck, C.K. (1988) An Interface for Case-Based Knowledge Acquisition.
Proceedings of the DARPA Case-Based Reasoning Workshop, Kolodner, J.L. (Ed.), Morgan Kaufmann, Calif., US.
- “McMOPS: Case-Based Reasoning in Miniature.”
Proceedings of the Case-Based Reasoning Workshop at AAAI-88, August 23, 1988. (Proceedings distributed at the workshop)
- “Knowledge Acquisition for Case-Based Reasoning Systems.”
Proceedings of the SOAR 88 Workshop on Automation and Robotics, Dayton, OH, July 20–23, 1988.
- “An Interface for Case-Based Knowledge Acquisition.”
Proceedings of the Case-Based Reasoning Workshop, Clearwater Beach, Florida, May 10–13, 1988.
- “Toward Completely Integrated Parsing and Inferencing.”
Proceedings of the Eighth Annual Conference of the Cognitive Science Society, Amherst, MA, August 15 - 17, 1986.
- “Toward Uniform Parsing and Inferencing for Learning.”
Proceedings of the Fifth National Conference on Artificial Intelligence, Philadelphia, PA, August 11 - 15, 1986.

“Principles of Procedures Composition.”
Proceedings of the Fourth Annual Conference of the Cognitive Science Society, Ann Arbor,
August 4 - 6, 1982, pp. 185 - 187.

“Failure-Driven Learning in a Complex Domain.”
Proceedings of the Seventh International Joint Conference on Artificial Intelligence, Vancouver,
August 1981.

“Perspectives in Parsing,” Invited Panelist, Proceedings of the 19th
Annual Meeting of the Association for Computational Linguistics in Stanford, June 29 - July 1,
1981, pp. 105 - 106.

“Failure-driven Reminding as a learning mechanism.”
Machine-Learning Workshop Symposium, Carnegie-Mellon University, July 16 - 18, 1980.

“Delayed interpretation using processing notes.”
Proceedings of the Fifth International Joint Conference on Artificial Intelligence, Cambridge,
August, 1977.

“MARGIE: Memory, analysis, response generation and inference in English.”
With R. Schank, N. Goldman, and C. Rieger.
Proceedings of the Third International Joint Conference on Artificial Intelligence, 1973.

“Expectation as a basic mechanism of language comprehension.”
International Conference on Computational Linguistics, Pisa, Italy, 1973.

INVITED TALKS

“Tools and Tool Users, Engines and Drivers: Crafting and Delivering Multimedia.”
Invited talk, Multimedia TecForum, Fall International Engineering Consortium, Denver, Colorado
(1994).

“Outcome-driven Simulations,”
Talk, Institute for the Learning Sciences,
Northwestern University, October 8, 1993.

“Replacing CBR: Now What?”
Invited talk. AAAI Case-based Reasoning
Workshop, Washington, D.C., July 12, 1993.

“Programs that can't, teach: How AI can change education.”
Invited talk. Washington University, Saint Louis, October 2, 1992.

“Case-based Reasoning.”
Invited presentation to the Chicago chapter of the Association for Computing Machinery,
September 17, 1992.

“Programs that can't, teach: How AI can change education.”
Keynote talk, Midwest AI Conference, Starved Rock, Illinois, May 3, 1992.

“Chimps, Terrorists, and Cows that Fly: Life in the Learning Sciences.”
Northwestern Alumni Seminar Day, Northwestern University, April 7, 1990.

“Computer Understanding of Natural Language.”
Computer Science Department Colloquium, Temple University, Philadelphia, PA, March 5, 1981.

“Research at the Yale AI Project.”
Interdisciplinary Physical Sciences Seminar, Yale University, New Haven, CT, Feb. 23, 1981.

“The Yale Artificial Intelligence Project.”
Talk given to the Philosophy Dept., Ball State University, Muncie, Indiana, Oct. 31, 1980.

WORKSHOPS

“Do-Review-Redo: A Critique-Based Alternative to Homework, Exams and Grades.”
Third Annual Learning, Teaching, and Assessment Forum.
Northwestern University, November 18, 2015.

“Teach Transfer: Tools for building intelligent tutors.”
Third Annual Summer Instructional Technology Institute.
Utah State University, July 1991.

“Architectures for Case-based Reasoning.”
Panel Chair, AAAI Symposium on Case-based Reasoning, Stanford, CA, March 27–29, 1990.

“Are Questions Just Function Calls?”
Invited Speaker,
Workshop of Question Generation, Memphis State University, Memphis, TN, May 8-9, 1986.

“Qualitative Reasoning,”
Invited Panelist, Third Annual
Workshop on Theoretical Issues in Conceptual Information Processing, Atlanta, GA., 1986.

“Marker Passing Parsers,”
Invited Panelist, Second Annual
Workshop on Theoretical Issues in Conceptual Information Processing, New Haven, CT, 1985.

“Scripts, plans, and knowledge structures.”
US-Japan Joint Symposium on Cognitive Science. Tokyo, Sept. 10 - 15, 1980.

“Thinking in words: mental sentences.”
Knowledge Representation Workshop, Brown University, June 12–14, 1980.

TECHNICAL REPORTS:

“TaxOps: Giving expert advice to experts.”
Brian M. Slator and Christopher K. Riesbeck.
Technical Report #19.
The Institute for the Learning Sciences.
October, 1991.

“Explanation: A Second Pass.”
Roger C. Schank and C. K. Riesbeck.
Research Report #384.
Computer Science Department, Yale
University, July, 1985.

“Direct Memory Access Parsing.”
C.K. Riesbeck and C.E. Martin.
Research Report #354.
Computer Science Department, Yale
University, July, 1985.

“Reasoning-Driven Memory Modification in the Economics Domain.”
James C. Spohrer and Christopher K. Riesbeck.
Research Report #308.
Computer Science Department, Yale
University, May, 1984.

“Micro-Sam and Micro-Eli: Exercises in popular cognitive mechanics.”
With E. Charniak.
Research Report #139,
Computer Science Department, Yale
University, September, 1978.

“Computational understanding: Analysis of sentences and context.”
Ph.D. Thesis.
Computer Science Department, Stanford University,
June, 1974.

“A conceptually-based sentence paraphraser.”
With N. Goldman.
Artificial Intelligence Memo AI-196,
Stanford University, Stanford, California. 1973.

“Primitive concepts underlying verbs of thought.”
With R. Schank, N. Goldman, and C. Rieger.
Artificial Intelligence Memo AI-162,
Stanford University, Stanford, California. 1972.