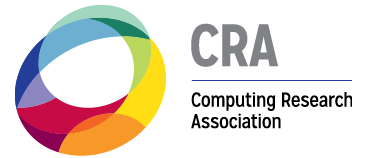


2019 BOARD NOMINEE

# C. Raymond Perrault

Senior Technical Advisor, AI Center  
SRI International



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## Awards and Honors and Year Received

- Fellow, American Association of Artificial Intelligence, (1990)
- Fellow, American Association for Advancement of Science (2018)
- IJCAI Donald E Walker Distinguished Service Award (2011)
- DARPA Award for Excellence by a Performer (2007), with 3 other members of the SRI CALO team.

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## Involvement in CRA Activities

- I have attended two Snowbird meetings and participated in a panel on scientific publication

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## Other Relevant Experience

- Department of Computer Science, University of Toronto, Assistant, Associate and Full Professor, (1974-1983).
- Artificial Intelligence Center, SRI International, Sr Computer Scientist (1983-87), Director (1987-2017), Co-PI, CALO Project (2002-2009).
- Center for the Study of Language and Information, Stanford University, Founding Principal (1983-89)

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## Research Interests

- Computational linguistics, particularly dialog models inspired by models of mental states
- AI planning, and plan recognition
- AI and cybersecurity

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## Personal Statement

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Aside from my SRI responsibilities, I have devoted significant effort to professional societies (President of ACL, 1982; Conference chair and President of IJCAI, 1993-1999), journals (Co-Editor-in-Chief, AI Journal, 2001-2010), and advisory boards, in US and internationally (Member then Chair, AI and Robotics Program, Canadian Institute for Advanced Research, 1989-98; Member then Chair, ICSI Board of Trustees (2016-)). Since 2016, I have been on the Steering Committee of the AI Index, a long-term project to assess the progress and impact of AI.

## C. RAYMOND PERRAULT

Senior Technical Advisor  
Artificial Intelligence Center  
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Email : ray.perrault@sri.com  
<https://www.sri.com/about/people/c-raymond-perrault>

### EDUCATION

B.Sc., (First Class Honours in Mathematics), McGill University, (1969)  
MA., Computer and Communications Sciences, University of Michigan, (1971)  
Ph.D., Computer and Communications Sciences, University of Michigan, (1975)

### PROFESSIONAL EXPERIENCE

**Senior Technical Advisor, Information and Computing Sciences Division, SRI International (2017-present).**  
Project management and business development, mostly for DARPA and Intelligence Community clients.

**Director, Artificial Intelligence Center, SRI International (1987-2017).** Responsible for organization of 60 staff (55 FTE), with revenues of \$20M p.a. AIC performs research in planning, machine learning, computer vision, robotics, natural language processing, reasoning and representation, and bioinformatics. Major funders are DARPA, IARPA, NIH, other DoD agencies, and several commercial clients. Almost all our projects involve collaborations with other groups, both inside SRI (esp. in cybersecurity, speech, robotics, education and training) and outside SRI, mostly universities who are subcontractors to us on government projects. Some highlights of my tenure as director:

**Co-PI, CALO Project (2002-2009).** Responsible for top-level planning and execution of 7-year, \$200M project involving up to 25 university and commercial subcontractors per year on development of machine learning techniques and their application in an intelligent assistant and in several military systems. Won DARPA Award for Excellence by a Performer in 2007. The project resulted in over 650 publications. Several technologies resulting from the project have been transitioned to the services or to spinoff companies.

**Commercialization.** SRI has had since the 1990s an active program to commercialize its IP, mostly from government research, through the creation of startup companies, licensing, and patent sales. This activity is led by groups of specialists at both the corporate and division levels. Startup companies are often incubated at SRI, led by recruited entrepreneurs-in-residence. As lab director, I have been involved in setting strategy and policy, recruiting, and managing the interaction between AIC staff and the companies, both during incubation and after spinout. Our biggest success has been Siri, incubated during the CALO project, spun out in 2008 and sold to Apple, but there have been several others (Discern, Social Kinetics, Trapit, Tempo AI, Desti, and Kasisto).

**Program Director, Natural Language, SRI International (1985-1987).** I was responsible for a group of about 15 researchers, working on typed and spoken queries to databases, and the first systems for information extraction from text.

**Acting Director, Speech Technology and Research Lab, SRI (1999-2003).**

**Senior Computer Scientist, Artificial Intelligence Center, SRI International (1983-1988)**

**Assistant, Associate and Full Professor, Department of Computer Science, University of Toronto (1974-1983).**  
With a remarkable group of grad students, we began the development of an application of methods inspired from AI planning, plan recognition, reasoning about mental states, and the philosophy of language to natural language dialogue. Two of my PhD students and four of their students are AAI Fellows.

### VISITING AND CONSULTING POSITIONS

Lecturer, Department of Computer Science, Stanford University, (Spring 1986)  
Consulting Professor, Department of Philosophy, Stanford University, (1983-present)  
Visiting Scientist, Bolt Beranek and Newman Inc., (1981)

## HONORS AND AWARDS

Fellow, American Association of Artificial Intelligence, (1990)

DARPA Award for Excellence by a Performer (2007), with 3 other members of the SRI CALO team.

SRI Presidential Achievement Award to AI Center (2006). This is SRI's top award to research groups, given to at most one group a year. We were the third to receive it.

IJCAI Donald E Walker Distinguished Service Award (2011)

Fellow, American Association for the Advancement of Science (2018)

## PUBLICATIONS

### REFEREED JOURNAL AND CONFERENCE ARTICLES

C. R. Perrault, Intercalation lemmas for tree transducer languages, *J. of Computer and System Sciences*, 13, 3, 246-277, 1976.

C. R. Perrault, Augmented transition networks and their relation to tree transducers, *Inf. Sci.* 11, 93-110, 1976.

J. Mylopoulos and C. R. Perrault, Man-machine communication: the artificial intelligence approach, *Can. J. of Inf. Sc.*, 2, 1, 120-128, 1977.

C. R. Perrault, J. F. Allen, and P. R. Cohen, Speech Acts as the basis for understanding dialogue coherence, *Am. J. of Computational Linguistics*, microfiche 79, 1978.

P. R. Cohen and C. R. Perrault, Elements of a Plan-Based Theory of Speech Acts, *Cognitive Science* 3, 3, pp 177-212, 1979. Reprinted in B. L. Webber and N. J. Nilsson (eds.), *Readings in Artificial Intelligence*, Tioga Press, 1981. Also reprinted in B. J. Grosz, K. Sparck Jones, and B.L. Webber (eds.) *Readings in Natural Language Processing*, Morgan Kaufmann, 1986. Also reprinted in L. Gasser (ed.) *Readings in Distributed AI*, Morgan Kaufmann, 1988.

J. Mylopoulos and C. R. Perrault, Learning programs in artificial intelligence, *Evolutionary Theory*, 4, 265-273, 1979.

C. R. Perrault, On the Mathematical Properties of Linguistic Theories, *Computational Linguistics*, 10, pp 165-176, 1984. Reprinted in B. J. Grosz, K. Sparck Jones, and B.L. Webber (eds.) *Readings in Natural Language Processing*, Morgan Kaufmann, 1986. Early version given as invited address at ACL-83 and published in the proceedings.

J. F. Allen and C. R. Perrault, Analyzing Intention in Utterances, *Artificial Intelligence*, 15, pp 143-178, 1980. Reprinted in B. J. Grosz, K. Sparck Jones, and B.L. Webber (eds.) *Readings in Natural Language Processing*, Morgan Kaufmann, 1986.

C. R. Perrault and J. F. Allen, A plan-based analysis of indirect speech acts, *Computational Linguistics*, 6, 3, pp 167-182, 1980.

C. R. Perrault, Review of Meaning and Grammar by Chierchia and McConnell-Ginet, *Artificial Intelligence*, 63, 1-2, pp. 493-502, 1993.

## BOOK CHAPTERS

C. R. Perrault and P. R. Cohen, It's for your own good: A note on inaccurate reference, in Joshi, A., Sag, I., Webber, B. (eds.), *Elements of Discourse Understanding*, Cambridge University Press, 1981.

P. R. Cohen, C.R. Perrault, and J. F. Allen, Beyond Question Answering, in W. Lehnert and M. Ringle (eds.), *Strategies for Natural Language Processing*, pp. 245-272, Lawrence Erlbaum, 1982.

C. R. Perrault and B. Grosz, Natural Language Interfaces, *Annual Reviews of Computer Science*, 1, pp. 47-82, Annual Reviews Incorporated, 1986. Reprinted in H. Shrobe (ed.) *Exploring Artificial Intelligence*, Morgan Kaufmann, 1988.

C. R. Perrault, An Application of Default Logic to Speech Act Theory, in P. R. Cohen, J. Morgan, and M. Pollack (eds.) *Intentions in Communication*, MIT Press, 1990.

## REPORTS

Yoav Shoham, Raymond Perrault, Erik Brynjolfsson, Jack Clark, and Calvin Legassick, "The AI Index 2017 Annual Report", AI Index Steering Committee, Stanford University, Stanford, CA, November 2017.

Yoav Shoham, Raymond Perrault, Erik Brynjolfsson, Jack Clark, James Manyika, Juan Carlos Niebles, Terah Lyons, John Etchemendy, Barbara Grosz and Zoe Bauer, "The AI Index 2018 Annual Report", AI Index Steering Committee, Human-Centered AI Initiative, Stanford University, Stanford, CA, December 2018.

## STUDENTS SUPERVISED (all at University of Toronto)

Alexander Borgida, Ph.D. (1977)

Philip R. Cohen, Ph.D. (1978)

James F. Allen, Ph.D. (1979)

Henry Kautz, M.S. (1982)

Robin Cohen, Ph.D. (1983)

## SCIENTIFIC AND PROFESSIONAL SOCIETY SEERVICE

**President, International Joint Conference on AI, Inc. (IJCAI)** (1995-1999), Trustee (1992-2001) Conference Chair, International Joint Conference on AI, Montreal, (1995). As Conference Chair (then effectively chair of the board of trustees) I instigated the separation of responsibilities between the conference chair and a new role of president of the organization, to focus on longer-term issues.

**Co-Editor-in-Chief, Artificial Intelligence Journal, (2001-2010)**, Editorial Board (1983-2010). In 2001, the then-EiCs of AIJ decided to step down. Erik Sandewall and I were elected to replace them. We led some major changes in the management of the editorial functions of the journal, which was (and still is) owned by Elsevier. We convinced IJCAI to take on the editorial board and its assets as a division, to give it transparency in the community. We reorganized the editorial board, setting up associate editors, putting all members on fixed terms, and ending stipends to the EiCs. We developed a new editorial management system. After Tony Cohn took over from Sandewall in 2006, we negotiated a new agreement with Elsevier that resolved some long-standing issues between the board and its publisher, providing for open access to all articles after a year, I believe a first with Elsevier journals. Elsevier also agreed that through IJCAI, anyone could sign up for free access to AIJ, which about 3000 readers p.a. did when I stepped down. We put the assets of the editorial board under professional management and committed to use the annual royalties received from Elsevier to support conferences, workshops and other activities in AI, a program which still sponsors about \$250,000 in grants p.a.

**AI Index, Executive Committee** (2016-present). The AI Index (<https://www.aiindex.org>) is a project operating under the umbrella of the AI-100 project at Stanford, whose aim is to develop a measure of the progress of AI, based on a combination of measures of technical progress in different subareas; publications, conference attendance; students in universities and online courses; investment and jobs. Reports were released in 2017 and 2018, and widely reported on in major publications (NY Times, Wall Street Journal, Wired, Financial Times, MIT Technology Review)

Associate Editor, IEEE Intelligent Systems (2010-present)  
President, Association for Computational Linguistics, (1983), Vice-President (1982)  
Editorial Board, American Journal of Computational Linguistics, (1978-81, 1986-89)  
Editorial Board, Computational Intelligence, (1987-2006)  
Invited Speaker Chair, AAAI-91, Anaheim, CA (1991)  
Executive Committee, IJCAI-83, Karlsruhe (1983)  
Local Arrangements Chair, 20th Annual Meeting of Association for Computational Linguistics, Toronto (1982)  
Program Chair, 19th Annual Meeting of Association for Computational Linguistics, Stanford (1981)  
Secretary, Canadian Society for Computational Studies of Intelligence (1980-82)  
General Chair, Second Annual Meeting of Canadian Society for Computational Studies of Intelligence (1978)  
Member AAAS, ACM, AAAI, Sigma Xi

## **ADVISORY BOARDS**

Chair, Board of Trustees, International Computer Science Institute, Berkeley (2018-present), and member (2016-2018)  
Advisory Board, AI Brain (2015-present)  
Advisory Board, Intellizence (2017-present)  
Founding Principal, Center for the Study of Language and Information, Stanford University (1983)  
Member, Advisory Board, Center for the Study of Language and Information (1999-2003)  
Scientific Advisory Board, Istituto per la ricerca scientifica e tecnologica (now Fondazione Bruno Kessler)(Italy) (1998-2003)  
Scientific Advisory Board, SAP Research (2010-2012)  
Member, Review Panel for Computer Science, Engineering and Physical Sciences Research Council, UK (2001 and 2006)  
Scientific Advisory Board, AI and Robotics Program, Canadian Institute for Advanced Research (Member 1989-1998, Chair 1995-98)  
Member, International Review Council, iCore (then Alberta Innovates) (Canada) (2006-2013)  
Contributor, "More than Screen Deep", Computer Science and Telecommunications Board National Research Council, (1996)  
Member, Technology Assessment and Review Panel in Information Technology for Deputy Director for Research and Engineering, Dept. of Defense (1996)  
Co-author, Report from American Association for Artificial Intelligence (AAAI) to DARPA on the Future of Artificial Intelligence (1994)  
Co-author and Editor, Report from Division of Behavioral, Economic and Social Sciences of NSF on Program Evaluation (1995)  
Scientific Committee, Programme Action Structurantes, FCAR, (Quebec Ministry of Higher Education), (1986-1992)