

Curriculum Vitae

Janice Singer, Ph.D.

Senior Research Officer
National Research Council Canada

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Professional Experience

Adjunct Professor, University of Ottawa, 2005-

Adjunct Full Professor, University of Victoria, 2004-

Project Manager, Advanced Syndromic Surveillance and Emergency Triage (ASSET), a \$3 million CRTI CBRNE funded project to install syndromic surveillance technology in the city of Ottawa (pop. 3 million). 2007-

Consultant, Microsoft. Collected data to document verification and validation practices of software engineers. March 2008.

Senior Research Officer. National Research Council Canada, Ottawa, ON. Research in software engineering. (*Part time between 2001 – 2008*) 2001-

Lead Human Computer Interaction Program, National Research Council. Setting up and organizing a group of 10 researchers in Human Computer Interaction. 2001-2007.

Associate Research Officer, National Research Council Canada, Ottawa, ON. Investigate, through both qualitative and quantitative means, the work that software engineers do in order to derive requirements for better tools specifically tuned to the needs of software engineers. (*Part time between 1995- 2001*). 1994-2001

Post-doctoral fellow, Learning Research and Development Center, Pittsburgh, PA. Developed computer programs to teach young children about proportions. Based on theory developed in dissertation. 1992-1994.

Graduate Research Assistant, Learning Research and Development Center, Pittsburgh, PA. Conducted research on mathematical cognition and social influences on cognition. 1986-1992.

Intern, IBM T.J. Watson Research Center, Yorktown Heights, NY. Designed and developed computer system to teach new programming language to experienced programmers. 1988, 1989.

Summer Intern, Xerox Palo Alto Research Center, Palo Alto, CA. Conducted research on computer tutors to teach children physics. 1987.

Research Staff, Human Factors Laboratory, Tektronix, Inc., Beaverton, OR. Evaluated voice-input devices for use with oscilloscopes and computer assisted engineering systems. . 1986.

Software Engineer, Projection System Products, Tektronix, Inc., Vancouver, WA. Designed interface for computer controlled large screen projector. 1985.

Programmer, Naval Personnel Research & Development Center, San Diego, CA. Implemented computer assisted testing program. 1984-1985.

Books

Shull, F., Singer, J., Sjoberg, D. (2007). Advanced topics in empirical software engineering: An edited volume. Springer.

Publications in Refereed Journals

Storey, M.A., Ryall, J., Singer, J., Myers, D., Cheng, L-T., Muller, M. (submitted). How Software Developers use Tagging to Support Reminding and Refinding. In consideration as an invited manuscript for IEEE Transactions in Software Engineering.

Vigder, M., Vinson, N., Singer, J., Stewart, D., Mews, K. (2008). Supporting Scientists' Everyday Work: Automating Scientific Workflows. IEEE Software, 25(4).

Molyneaux, H., O'Donnell, S., Gibson, K., Singer, J. (2008). Exploring the Gender Divide on YouTube: An Analysis of the Creation and reception of vlogs. American Communication Journal. Volume 10, Number 1.

Emond, B., Vinson, N., Singer, J., Barfurth, M., Brooks, M. (2007). The Young Artists' Programme Video Player: A Digital Video Player To Support Music Practice And Learning. Journal of Technology in Music Learning.

Dittrich, Y, John, M., Singer, J., Tessem, B. (2007). Editorial For Special Issue On Qualitative Software Engineering. Information And Software Technology. Vol 49 (6), pp. 531-539.

Cubranic, D., Murphy, G., Singer, J., Booth, K. (2005). Hipikat: A Project Memory For Software Development. IEEE Transactions in Software Engineering, 31, 446 - 465.

Lethbridge, T., Sim, S., Singer, J. (2005). Studying Software Engineers: Data Collection Techniques for Software Field Studies. Empirical Software Engineering, 10, 311-341.

Vinson, N.G., Singer, J. Consent Issues Raised by Observational Research in Organisations, NCEHR Communiqué. Volume 12, Number 2. 2004. pp. 35-36.

Lethbridge, T., Singer, J., Forward, A. (2003) How Software Engineers Use Documentation: The State Of The Practice. IEEE Software, 20(6), 35-39.

Singer, J, & Vinson, N. (2002). Ethics in Empirical Studies of Software Engineering. IEEE Transactions in Software Engineering. Vol 28 (12), pp. 1171-1180.

Singer, J., Vinson, N. (2001). Why And How Research Ethics Matters To You, Yes YOU! Empirical Software Engineering, 6(4): 287-290.

Vinson, N., & Singer, J. (2001). Getting To The Source Of Ethical Issues. Empirical Software Engineering, 6(4): 293-297.

- Sim, S., Singer, J., Storey, M. (2001). Beg, Borrow, or Steal: Using Multidisciplinary Approaches in Empirical Software Engineering Research. *Empirical Software Engineering*, 6(1), 85-93
- Singer, J., Vinson, N. (2000). Viewpoint: Ethics And Empirical Studies Of Software Engineering. *Empirical Software Engineering: An International Journal*. Vol. 5(2), pp. 89-91.
- Kitchenham, B., Travassos, G., von Mayrhauser, A., Niessink, F., Schneidewind, N., Singer, J., Takada, S., Vehvilainen, R., & Yang, H. (1999). Towards An Ontology Of Software Maintenance, *Journal Of Software Maintenance: Research & Practice*, 11, 365-389.
- Singer, J., & Resnick, L. (1992). Proportional Reasoning: Are Children Part-Whole Or Part-Part Reasoners? *Educational Studies in Mathematics*, 23, 231-246.

Book Chapters

- Singer, J., Sim, S., & Lethbridge, T., (2007). Software Engineering Data Collection Techniques In The Field. In F. Shull, J. Singer, D. Sjoberg, (Eds.) *Advanced topics in empirical software engineering: An edited volume*. Springer.
- Vinson, N., & Singer, J. (2007). Ethical Issues In Empirical Software Engineering Research. In F. Shull, J. Singer, D. Sjoberg, (Eds.) *Advanced topics in empirical software engineering: An edited volume*. Springer.
- Easterbrook, S., Storey, M-A., Singer, J., Damian, D., (2007). Matching Methods To Questions In Empirical Software Engineering. In F. Shull, J. Singer, D. Sjoberg, (Eds.) *Advanced topics in empirical software engineering: An edited volume*. Springer.
- Lethbridge, T., & Singer, J. (2001). Experiences Conducting Studies Of The Work Practices Of Software Engineers. In H. Erdogmus & O. Tanir (Eds.) *Advances in Software Engineering: Comprehension, Evaluation, and Evolution*. New York: Springer.
- Singer, J., Kohn, A., & Resnick, L. (1996). Knowledge Of Proportions In Different Contexts. In T. Nunes & P. Bryant (Eds.), *How do children learn mathematics?* Hillsdale, NJ: Lawrence Erlbaum Associates.
- Resnick, L.B., & Singer, J. (1992). The Protoquantitative Origins Of Ratio Reasoning. In T. Carpenter, E. Fennema, & T. Romberg (Eds.), *Rational numbers. An integration of research*. New Jersey: Lawrence Erlbaum.

Publications in Refereed Conference or Workshop Proceedings

- Cheng, L., Storey, M-A., Ryall, J., Bull, I., Myers, D., Singer, J. (2008). TODO Or To Bug: Exploring How Task Annotations Play A Role In The Work Practices Of Software Developers. International Conference in Software Engineering. Leipzig, Germany.
- Cheng, L., de Souza, C., Dittrich, Y., Hazzan, O., Maurer, F., John, M., Sharp, H., Sillito, J., Sim, S., Singer, J., Storey, M-A., Tessem, B., Venolia, G. (2008). Cooperative And Human Aspects Of Software Engineering (CHASE 2008). International Conference in Software Engineering. Leipzig, Germany.
- Milliken, M., Gibson, K., O'Donnell, S., Singer, J. User-Generated Online Video And The Atlantic Canadian Public Sphere: A YouTube Study. Proceedings of the International Communication Association Annual Conference. Montreal, Quebec.

- O'Donnell, S., Gibson, K., Milliken, M., Singer, J. (2008). Reacting To YouTube Videos: Exploring Differences Among User Groups. Proceedings of the International Communication Association Annual Conference. Montreal, Quebec.
- Molyneaux, H., Gibson, K., O'Donnell, S., Singer, J. (2008). New Visual Media And Gender: A Content, Visual And Audience Analysis Of YouTube Vlogs. Proceedings of the International Communication Association Annual Conference. Montreal, Quebec.
- Storey, M-A., Cheng, L., Singer, J., Muller, M., Ryall, J., Myers, D. (2007). Turning Tags Into Waypoints For Code Navigation. International Conference on Software Maintenance. Paris, France.
- Izquierdo, L, Damian, D., Singer, J., Kwan, I. (2007). Awareness In The Wild: Why Communication Breakdowns Occur. International Conference on Global Software Engineering, Brazil.
- Singer, J. (2006). Testing Tools and Techniques: A Mini-Tutorial on Evaluation Methods for ASE. Automated Software Engineering 2006, 371-374
- Singer, J., Elves, R., Storey, M.-A. (2005). NavTracks: Supporting Navigation in Software Maintenance. International Conference on Software Maintenance, 325-334
- Singer, J.,Elves, R., Storey, M.-A. (2005). NavTracks: Supporting Navigation in Software. International Conference on Program Comprehension, 173-175
- Cubranic, D., Murphy, G., Singer, J., Booth, K. (2004). Learning From Project History: A Case Study For Software Development. Computer Supported Cooperative Work,.
- Patrick, A., Singer, J., Corrie, B., Noël, S., El-Khatib, K., Emond, B., Zimmerman, T., Marsh, S. (2004). A QoE Sensitive Architecture for Advanced Collaborative Environments. QSHINE 2004: 319-322
- Emond, B., Vinson, N.G., Singer, J., Barfurth, M.A., Fernandes, G., White, R., Ferres, L., and Brooks, M., Spence, J. (2004). Digital Media Player Controls Supporting Music Education. Proceedings of the International Conference on New Media Research Networks, pp. 35-38. NRC 47097.
- Barfurth, M., Singer, J, Emond, B, Vinson, N., Brooks, M., Spence, J., (2002). Evaluation Factors for Multi-stakeholder Broadband Visual Communication Projects, WETICE 2002, Pittsburgh, PA.
- Singer, J. (1999). Using The American Psychological Association (APA) Style Guidelines To Report Experimental Results. Proceedings of Workshop on Empirical Studies in Software Maintenance, Oxford, England.
- Singer, J. (1998). Just-In-Time Comprehension Vs. The Full-Coverage Strategy. Workshop for Empirical Studies of Software Maintenance, Washington, D.C.
- Singer, J. (1998) Practices Of Software Maintenance. International Conference on Software Maintenance, Washington, D.C.
- Singer, J., & Lethbridge, T. (1998). Studying Work Practices To Assist Tool Design. International Workshop on Program Comprehension, Ischia, Italy.
- Lethbridge, T., & Singer, J. (1997). Understanding Software Maintenance Tools: Some Empirical Research. Workshop for Empirical Studies of Software Maintenance, Bari, Italy.
- Singer, J., Lethbridge, T., Anquetil, N., & Vinson, N. (1997). An Examination Of Software Engineering Work Practices. CASCON, Toronto, ON.
- Singer, J., & Lethbridge, T. (1996). Strategies For Studying Maintenance. Workshop For Empirical Studies Of Software Maintenance, Monterey, CA.

- Lethbridge, T., & Singer, J. (1996). Methods For Studying Maintenance. Workshop for Empirical Studies of Software Maintenance, Monterey, CA.
- Carroll, J., Singer, J., Bellamy, R., & Alpert, S. (April, 1990) A Viewmatcher For Learning Smalltalk. Paper presented at the ACM Conference on Human Computer Interaction, Seattle, WA.
- Singer, J., Behrend, S., & Roschelle, J. (1988). Children's Collaborative Use Of A Computer Microworld. Paper presented at the Second Conference on Computer-Supported Cooperative Work, Portland, OR.
- Behrend, S., Singer, J., & Roschelle, J. (1988). A Methodology For The Analysis Of Collaborative Learning In A Physics Microworld. Paper presented at the International Conference on Intelligent Tutoring Systems, Montreal, Canada.

Presentations at Refereed Conference or Workshops

- Singer, J., & Abbott, J., (2005) Ongoing Ethics Review. National Council On Ethics In Human Research, Ottawa, Canada.
- Corrie, B., Wong, H., Zimmerman, T., Marsh, S., Patrick, A.S., Singer, J., Emond, B., & Noel, S. (2003). Towards Quality Of Experience In Advanced Collaborative Environments. Paper Presented At The Third Annual Workshop On Advanced Collaborative Environments, June 22, Seattle. (NRC 46521)
- Singer, J., (2004). Human Subjects Ethics In Intelligent Systems Research, Presented At IS 2004 : 14th Annual Canadian Conference On Intelligent Systems, June 6-8, 2004, Ottawa, ON, Canada.
- Singer, J. (1994). From Direct To Covariational Knowledge: Paths For Learning Proportionality. American Educational Research Association, New Orleans.
- Singer, J. & Resnick, L. (1993). Protoquantities To Operators: Four Types Of Mathematical Thinking. Paper Presented At The International Society For The Study Of Behavioural Development, Recife, Brazil.
- Singer, J. (1992). Reasoning About Density: The Influence Of Two Processes. Poster Presented At Society For Research In Child Development, New Orleans.
- Singer, A., & Kohn, A. (1992). Less Is More: Do Young Children Understand Inverse Covariation? Poster Presented At The Annual Meeting Of The Jean Piaget Society. Montreal, Canada.
- Kohn, A., & Singer, J. (1992). More Is Not Arbitrary: Children's Reasoning About Direct And Inverse Covariation. Paper Presented At American Educational Research Association, San Francisco.
- Singer, J., & Lovett, S. (1992). Children's Understanding Of Probability: Quantitative Or Directly Apprehended? Poster Presented At The American Educational Research Association, San Francisco.
- Singer, J., & Kohn, A. (1991). Children's Reasoning About Quantitative Covariation. Poster Presented At The Annual Meeting For The Society For Research In Child Development, Seattle, WA.
- Lovett, S., & Singer, J. (1991). The Development Of Children's Understanding Of Probability: Perceptual And Quantitative Conceptions. Poster Presented At The Annual Meeting For The Society For Research In Child Development, Seattle, WA.

Technical Reports

Singer, J. (1985). Evaluation Of Two Voice Input Devices. Tektronix Technical Report.
Singer, J., Patrick, A.S., & Vinson, N. (2003). Canadian Human Computer Interaction Research Profile. Self-Published Discussion Paper, December, 2003

Journal Guest Editorships

Proposed: Special Issue On Cooperative And Human Aspects In Software Engineering (CHASE). IEEE Software.
Accepting Submissions: Special Issue On Software Development As Cooperative Work. Computer Supported Cooperative Work (CSCW) Journal.
Special Issue On Qualitative Software Engineering Research. Information Systems Technology (2007).
Special Issue On Research Ethics. Empirical Software Engineering (2004).

Keynote Addresses

What Matters In The Human Side Of Software Engineering . 2007 Summer Institute On The Human Side Of Software Development, Co-Sponsored By The University Of Washington And Microsoft Research.
So You Want To Do An Experiment? Ethical Issues In Empirical Software Engineering. EASE, Keele University, England. 2002.

Invited Presentations And Short Lectures

Codeaware: A New Paradigm For Creating Software Tools. IBM CAS Ottawa, June 2004.
Human Subjects Ethics In Intelligent Systems Research, Presented At IS 2004 : 14th Annual Canadian Conference On Intelligent Systems, June 6-8, 2004, Ottawa, ON, Canada.
Dagstuhl Seminar, What Would A Theory Of Software Engineering Be A Theory Of? February 2004.
Canadian HCI Research. Talk Given To ACM Ottawa CHI Chapter, 2003.
Open Source Ethics In Situ. NSF Workshop On Advancing The Research Agenda On Open Source Software. Washington, DC. 2002.
The NRC's HCI Program. Talk Given To Cognitive Science Department. Carleton University. 2002.
The NRC's HCI Program. Talk Given To Local ACM CHI Chapter. 2002.
Research Ethics. Talk Given To Consortium for Software Engineering (CSER) Researchers. 2000.
Work Practices And HCI. DCIEM, 2000.
Empirical Approaches And Software Engineering: What Is To Be Gained? Seminar On Measuring Success, NRC, 1999.
Using The APA Guidelines To Further Software Engineering Research. Workshop on Empirical Studies of Software Engineering, 1999.
Work Practices Of Software Engineers. CRIM, 1998.
Work Practices Of Software Engineers. Talk Given To ACM Ottawa CHI Chapter. 1998.

Seminar, Workshop, Or Panel Organization.

Software For Scientists, CASCON, Toronto, ON, October 2008.

Cooperative And Human Aspects Of Software Engineering. International Conference On Software Engineering, Leipzig, Germany, May 2008. The 2nd Most Popular Workshop At ICSE In 2008.

Supporting The Social Side Of Large Scale Software Development. Computer Supported Cooperative Work, Banff, November 2006.

SONA: First International Workshop On Software Navigation. McGill Research Institute. Barbados, March 2006.

Beg, Borrow, Or Steal: Using Multidisciplinary Approaches In Empirical Software Engineering Research. International Conference On Software Engineering. 2000.

IIT Pattern Writing Workshop. National Research Council, 2000.

Ethics In Software Engineering Research. Metrics, 1999.

Measuring Success – Empirical Studies Of Software Engineering. 1999.

CASCON' 98 Considering The Human Factor In Software Engineering, 1999.

CASCON' 98 Workshop On Designing Software Tools For People, 1998.

Panel Participation

The Future Of HCI In Canada, CASCON, 2002

Understanding Program Understanding, IWPC, 2000.

Is Maintenance More Than Just Another Form Of Development? ICSM 2000.

Research Ethics, Metrics, 1999.

Considering The Human Factor In Software Engineering, CASCON, 1999.

Workshop On Designing Software Tools For People, CASCON, 1998.

Committee Participation

Interagency (CIHR, SSHRC, NSERC) Panel Of Research Ethics. 2008-

Interagency (CIHR, SSHRC, NSERC) Panel On Research Ethics, Procedural Subcommittee 2004-

IIT Scientific Review Chair for Research Ethics, 2002-2008.

Precarn Research Management Committee, 2000-

Precarn Research Programs Committee, 2006-

Steering Committee, E-Commerce To E-Economy, Strategies For The 21st Century., 2005

Editorial Committee, E-Commerce To E-Economy, Strategies For The 21st Century 2005

NRC Ottawa Research Ethics Board, 1999-2002

NRC Ottawa REB IRAP Subcommittee, 1999-2002

Conference Chair

CASCON, 2004, Co-Chair With Hanan Lutfyya.

Program Committee Participation

ISTAS, 2008

End-User Software Engineering, 2007

ESEM, 2007, 2008

CASCON, 1995, 2001, 2003, 2004

International Workshop On Program Comprehension, 2000, 2001, 2002, 2003, 2004

Metrics, 2002, 2003, 2004

International Symposium On Empirical Software Engineering 2002, 2003, 2004

WETICE, 2004

Adhoc Reviewing

Alberta Ingenuity Fund Grant Review
American Educational Research Association
Atlantic Innovation Fund
Canada Foundation For Innovation
CASCON 1995-2002
Cognition And Instruction
Cognitive Development
Developmental Psychology
Empirical Software Engineering Journal
FCAR Grant Review
IEEE Transactions On Software Engineering
International Journal Of Human Computer Systems
Journal For Research In Mathematical Education
Journal Of Software Maintenance
Merrill-Palmer Quarterly
NSERC Grant Review, Industrial Research Professorships
Software Practice And Experience Journal

Supervision of Graduate Students

Andrew Forward, University of Ottawa, on Ph.D. committee, expected 2009.
Omar Badreldin, University of Ottawa, Ph.D., expected
Lucas Panjer. University of Victoria, on M.Sc. committee. 2008.
Davor Cubranic. University of British Columbia, on Ph.D. committee. 2005.
Robert Elves. University of Victoria, on M.Sc. Committee. 2005
Luis Izquierdo, University of Victoria, M.Sc., Committee. 2006.
Piotr Kaminski. University of Victoria. 2005.
Andrew Walenstein. Simon Fraser University. Summer 1999
Francisco Herrera. University of Ottawa. Summer 1999.
Magdalena Balazinska. Ecole Polytechnique de Montreal. Summer 1998.
Susan Sim. University of Toronto. Summer 1998.

External Reviewer

Kari Ronkko. Blekinge Institute of Technology. Ph.D. Thesis. 2006.
Gary Fernandes. Carleton University. M.Sc. Thesis. 2000.

Supervision of Undergraduate Students

Tao Weng, U. Waterloo (CS; co-op). Winter 1999.

WES Student

Magdalena Balazinska. Ecole Polytechnique de Montreal. Summer 1998.

Education

Ph.D. (1992) in Cognition, Development, and Learning with the Department Of Psychology at the Learning, Research and Development Center, University of Pittsburgh, Pittsburgh, PA. (Dissertation title: Reasoning about density: The influence of two processes).

B.A. (1984) in Cognitive Science, University of California San Diego.

Honors and Awards

McDonnell Postdoctoral Fellowship: Cognitive Studies in Education Program. 1992.

Honorable Mention, AERA Division E - Outstanding Dissertation Award in Human Development. 1992

Community Service

Registrar, OMJS, 2005-

Girl Guide Leader, 2002-2006

Chair, Positive Action for Conductive Education, 2000-2004

Secretary, PLAN Ontario, 2000