

Curriculum Vitae

Roxanne L. Canosa, Ph.D.

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EDUCATION

Doctor of Philosophy

Imaging Science, 2003

Rochester Institute of Technology

Rochester, New York

Concentration: Digital Image Processing / Visual Perception and Psychophysics

Dissertation: "Seeing, Sensing, and Selection: Modeling Visual Perception in Complex Environments"

Master of Science

Imaging Science, 2000

Rochester Institute of Technology

Rochester, New York

Thesis: "Eye Movements and Natural Tasks in an Extended Environment"

Bachelor of Science, *summa cum laude*

Computer Science, 1998

State University of New York, College at Brockport

Brockport, New York

Minor: Mathematics

Honors: 1998 Computer Science Departmental Scholar Award

1998 recipient of Sigma Xi award for Undergraduate Research in Computer Science

TEACHING AND LEADERSHIP EXPERIENCE

Assistant Professor of Computer Science

September 2003 to present

Department of Computer Science

Rochester Institute of Technology

Rochester, New York

Courses: Computer Science 1, Computer Science 2, Computer Science 3, Computer Science 4, Introduction to Computer Vision, Image Understanding (developed course from scratch), Analysis of Algorithms, Artificial Intelligence, CyberEthics (developed course from scratch), Operating Systems, Professional Communications, Data Structures for Problem Solving

Students: Trevor Clarke, M.S. thesis advisor, Lisa Tiberio, M.S. project advisor, Brian, Renzenbrink, M.S. thesis advisor, Manav Gupta, M.S. project advisor, Mustapha Guesmia, M.S. project advisor, Gati Vashi, M.S. thesis advisor, Boriana Dimitrova, M.S. project advisor, David Wollenhaupt, M.S. thesis and independent study advisor, Sneha Sharma, M.S. project and independent study advisor, Steven Kelly, independent study advisor, Thomas Kinsman, independent study advisor, David Snyder, Imaging Science undergraduate senior project advisor, Christopher Orogvany, M.S. project and independent study advisor, Srinivas Digumarty, M.S. project advisor, Pooja Sharma, independent study advisor, Feng Li, Ph.D. independent study advisor, Karl Baum, Ph.D. committee member, Derek Walvoord, Ph.D. committee member and independent study advisor, Kevin Soule, M.S. committee member, James Tsung, M.S. committee member, Kanishk Panwar, M.S. committee member, Jeffrey Zampieron, M.S. committee member,

Swarup Datta, M.S. committee member, Carlos Alfonso, M.S. committee member, Jonathan Rupe, M.S. committee member, Robin Burdick, M.S. committee member, Daniel Clark, M.S. committee member, Karthik Balasubramanian, M.S. committee member, Vishal Vaingankar, M.S. committee member, Chitrang Shah, M.S. committee member, Marianne Lipps, M.S. committee member, Kartik Nathan, M.S. project observer, Vineet Chaudhary, M.S. project observer, Kinjal Rathod, M.S. project observer, Fazim Mohammed, M.S. project observer, Pratik Khatavkar, M.S. project observer.

Leadership and Educational Development:

- Chairperson, Computer Science Department Assessment Committee 2006 – present
- GCCIS representative to RIT's General Education Learning Outcomes Committee 2008
- Member of CS Department Curriculum Committee and GCCIS College Curriculum Committee 2006 - 2009
- Chairperson, Computer Science Department First Year Committee 2004-2005
- Developed a set of interactive web-based tutorials for teaching introductory computer science concepts and programming techniques using a web compiler service, see <http://www.cs.rit.edu/~rlc/Red/>
- Developed a seminar course to prepare undergraduate and graduate students for research

Professional Activities:

- Steering committee member for Consortium for Computing Sciences in Colleges Northeast 2007
- Proposal reviewer for National Science Foundation CISE Research Experience for Undergraduates Program, Arlington VA, November 1-3, 2006
- Proposal reviewer for National Science Foundation Math and Science Partnership Program, Arlington VA, March 30 – 31, 2009
- Reviewer for *ACM Transactions on Applied Perception*
- Reviewer for *International Journal of Imaging Systems and Technology: Special Issue on Applied Color Image Processing*
- Reviewer for *IEEE Transactions on Image Processing*
- Reviewer for *Technical Communications for Engineers* by Brian D. Ballentine, Prentice-Hall Publishing
- Session chairperson for the 36th SIGCSE Technical Symposium on Computer Science Education, St. Louis, Missouri, February, 2005, Session title “The First Year: New Approaches”
- Reviewer for *Mathematical Foundations of Computer Science Conference 2005*
- Steering committee member for First Annual Conference on Computing and Information Sciences 2004
- Reviewer for textbook, *Data Structures: An Object-Oriented Approach with Java 5.0* by Sesh Venugopal, Prentice-Hall
- Reviewer for textbook, *A Comprehensive Introduction to Object-Oriented Programming with Java* by C. Thomas Wu, McGraw-Hill

Advisors and Collaborators:

- Joan M. Lucas, Ph.D., Associate Professor of Computer Science, State University of New York, Brockport, New York
- Sandeep Mitra, Ph.D., Associate Professor of Computer Science, State University of New York, Brockport, New York
- T.M. Rao, Ph.D., Professor of Computer Science, State University of New York, Brockport, New York
- Jeff B. Pelz, Ph.D., Associate Professor of Imaging Science, Rochester Institute of Technology, Rochester, New York
- Maria Helguera, Ph.D., Assistant Professor of Imaging Science, Rochester Institute of Technology, Rochester, New York

- Roger L. Easton, Ph.D., Professor of Imaging Science, Rochester Institute of Technology, Rochester, New York

PUBLICATIONS

- Canosa, R. L. (2010) "Saliency-based decision support" *Proceedings of the ACM SIGCHI Eye Tracking Research and Applications Symposium (ETRA)*, Austin Texas, March 22-24, 2010.
- Canosa, R. L. (2009) "Real-world vision: selective perception and task" *ACM Transactions on Perception* Vol. 6, No. 2, Article 11.
- Canosa, R.L. and Baum, K. (2009) "Modeling decision-making in single- and multi-modal medical images" *Progress in Biomedical Optics and Imaging*, Vol. 10. No. 39.
- Canosa, R.L. and Lucas, J.M. (2008) "Mock-trials and role-playing in computer ethics courses" *Proceedings of the 39th SIGCSE Technical Symposium on Computer Science Education*, Portland, Oregon, March 12 – 15, 2008.
- Bills, D. and Canosa, R.L. (2007) "Sharing introductory program curricula across disciplines", *Proceedings of the 8th Annual Conference on Information Technology Education*, Sandestin, Florida, October 2007.
- Kinsman, T. and Canosa, R.L. (2007) "Perceptual cost function for motion detection", *2007 Western New York Image Processing Workshop, IEEE Signal Processing Society*, September 2007.
- S. Mitra, T.M. Rao, R.L. Canosa, Marshall, S. and Bullinger, (2007) "Problem stereotypes and solution frameworks: A design-first approach for the introductory computer science sequence"; *Proceedings of the CCSCNE'07 Conference*, Rochester, New York, April 2007.
- Walvoord, D., Easton, R.L., Canosa, R.L. (2007) "Adding contextual information to improve character recognition on the Archimedes Palimpsest" *Proceeding of SPIE Electronic Imaging: Document Imaging and Retrieval XIV*, San Jose, CA, January 28-February 1, 2007.
- Canosa, R.L. (2006) "Image understanding as a second course in AI: Preparing students for research" *Proceedings of the 37th SIGCSE Technical Symposium on Computer Science Education*, Houston, Texas, March 1-5, 2006, pp. 543-547.
- Canosa, R.L. (2005) "Modeling selective perception of complex, natural scenes," *International Journal on Artificial Intelligence Tools: Architecture, Languages, Algorithms*, 14:233-260, Z. Markov and V. Barr, eds.
- Canosa, R.L. (2004) "Simulating biological motion perception using a recurrent neural network", *Proceedings of the 17th International Florida Artificial Intelligence Research Society Conference*, Miami Beach, Florida, May 17-19, 2004
- Canosa, R. L., Pelz, J.B., Mennie, N.R., and Peak, J. (2003). "High-level aspects of oculomotor control during viewing of natural-task images," *SPIE Proc. 5007, Human Vision and Electronic Imaging VIII*, B.E. Rogowitz, and T.N. Pappas, eds.
- Gaborski, R.S., Vaingankar, V.S., and Canosa, R.L. (2003). "Goal directed visual search based on color cues: Co-operative effects of top-down & bottom-up visual attention," in *Proceedings of the Artificial Neural Networks in Engineering*, Rolla,

Missouri.

- Pelz, J.B., Canosa, R., (2001). "Oculomotor behavior and perceptual strategies in complex tasks," *Vision Research*, 41:3587-3596.
- Pelz, J.B., Canosa, R., Babcock, J., and Barber, J. (2001). "Visual perception in familiar, complex tasks," *Proceedings of the 2001 International Conference on Imaging Processing (ICIP-2001)*.
- Pelz, J.B., Canosa, R.L., Kucharczyk, D., Babcock, J., Silver, A., and Konno, D., (2000). "Portable eye-tracking: A study of natural eye movements," *SPIE Proc. 3959, Human Vision and Electronic Imaging V*, B.E. Rogowitz and T.N. Pappas, eds.
- Pelz, J.B., Canosa, R., and Babcock, J. (2000). "Extended tasks elicit complex eye movement patterns," *Proceedings of the ACM SIGCHI EyeTracking Research and Applications Symposium 2000*.

PRESENTATIONS

- SPIE Symposium on Medical Imaging 2009: Image Perception, Observer Performance, and Technology Assessment, Lake Buena Vista, Florida, February 11 -12, 2009.
- 38th SIGCSE Technical Symposium on Computer Science Education, Cincinnati, Ohio, March 2007, poster presentation "Web-based editable Java tutorials".
- Consortium for Computing Sciences in Colleges East 2006, presented a workshop on "The Direct Assessment of Course and Program Outcomes in Computer Science", October 27-28, 2006.
- IEEE Upstate New York Workshop on Communications and Networks, Rochester Institute of Technology, November 18th, 2005, poster presentation on "Web compiler service".
- First Annual Conference on Computing and Information Sciences, Rochester Institute of Technology, Rochester, New York, January 21st, 2005.
- 17th International Florida Artificial Intelligence Research Society Conference, Miami Beach, Florida, May 17-19, 2004.
- Faces of Change Conference, Rochester Institute of Technology, Rochester, New York, April 2003. This conference is devoted to increasing the participation of young women in technology.
- SPIE Human Vision and Electronic Imaging Conference Santa Clara, California, January 2003.
- 6th Annual Conference on Cognitive and Neural Systems, Boston University, Boston, Massachusetts, May 2002, *Fellowship Recipient*.
- Speaker at a workshop for finalists of the Massachusetts State High School Science Fair Competition, Boston, Massachusetts, June 2001.

PREVIOUS WORK EXPERIENCE

Research Assistant, Teaching Assistant **September 1998 to May 2003**

Visual Perception Laboratory
Chester F. Carlson Center for Imaging Science
Rochester Institute of Technology
Rochester, New York

Designed and executed visual perception experiments, supervised student intern, assisted with course development, classroom instruction, and design and supervision of laboratories for Imaging Science Fundamentals course. Occasional lecturer for Survey of Imaging Science and undergraduate Vision course.

WebMaster

June 1995 to July 1996

Department of Computer Science, Department of Mathematics
State University of New York, College at Brockport
Brockport, New York

Laboratory Technician

May 1983 to April 1987

Eastman Kodak Company
Rochester, New York

Duties included testing electro-photographic film and hardware for aerial
reconnaissance systems and image analysis.