Dean F. Jerding

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GOALS

Seeking a position in which I can apply technical expertise, management knowledge, and leadership skills in an innovative technology and product development environment driven by identified or expected customer needs.

Areas of interest include information visualization, methods and support for software development (especially object-oriented), user-interface design, human-computer interaction, and ubiquitous computing.

EDUCATION

Ph.D. in Computer Science, **Georgia Institute of Technology**, expected June 1997.
College of Computing, Graphics, Visualization, and Usability Center.
Minor: Management of Technology GPA: 4.0
Thesis Topic: Visualizing Patterns of Interaction in the Execution of Object-Oriented Programs

The dynamic behavior of object-oriented programs is difficult to design, implement, and modify. Understanding the interactions between classes and objects is necessary to create efficient designs and make safe modifications. This thesis work seeks to identify, visualize, and analyze recurring patterns of interaction in object-oriented program executions as a means for understanding and examining dynamic behavior. Support is directed toward design recovery, validation, and reengineering tasks, such as comparing existing design or mental model specifications with design-level specifications reverse engineered from the implementation.

Another major research thrust concerns visualization techniques for the display and navigation of large information spaces, including software visualizations, text, and data. Developed a novel technique called the *Information Mural*. Have also designed and built views which show the behavior of algorithms executing on different machine architectures.

M.S. in Computer Science, **Georgia Institute of Technology**, 1996. GPA: 4.0

B.S. with High Distinction in Electrical Engineering, **University of Virginia**, 1992.
Computer Engineering concentration. Senior Thesis: MIDI Music Composer. GPA: 3.78

EXPERIENCE

Consultant, Broadband Communications Division, **Scientific Atlanta, Inc.**
Atlanta, GA. March 1996-present.

Worked with technology group, directing the design and implementation of a visualization system to evaluate potential video compression algorithms. Implemented in C++/C and X/Motif.

Performing interface development, including design, prototyping, usability testing, implementation, etc., for a new product concept.

Graduate Research Assistant, ***College of Computing***, **Georgia Institute of Technology**
Atlanta, GA. Summer 1996-present.

Part of MORALE project team conducting research to support mission-oriented evolution of legacy software (funded through DARPA). Applying thesis research in scenario analysis to help recover and validate architectural models of legacy systems.

***Summer Intern*, *Software Production Research Department*, AT&T Bell Laboratories**
Naperville, IL. Summer 1995.

Conducted research to identify and visualize patterns of interaction between objects in an object-oriented system. Added color to *Information Mural* technique. Devised more standardized data formats for visualization systems. Performed graphical analysis of telephone call information for AT&T business unit.

***Graduate Research Assistant*, *Scientific Visualization Lab*, Georgia Institute of Technology**
Atlanta, GA. 1992-Summer 1996.

Administer software for scientific visualization in lab for use by faculty and students. Give seminars on particular packages. Maintain lab WWW pages. Answer helpdesk questions on SGI systems and software.

***Summer Analyst, Strategic Systems Group*, Systems Planning and Analysis, Inc.**
Falls Church, VA. 1991, 1990, 1989.

Developed and coded in FORTRAN two missile targeting programs with the objective of maximizing damage to a given target base, within mission parameters. Gave briefings on both models. (summer 1991)

Coded C programs to perform SSBN vulnerability and effectiveness analysis; created briefing viewgraphs. Evaluated and validated space software tools. Investigated use of electric propulsion in orbital transfer vehicles; developed and documented C programs to effect such analysis. (summer 1990)

Improved and standardized missile trajectory models in FORTRAN. (1/1990)

ASAT project. Wrote and documented FORTRAN code to perform interceptor range envelope maximization and booster size optimization. Authored viewgraphs and briefing material. Formulated and coded in Pascal a model of fratricide effects on missile targeting. Instructed new employees. (summer 1989)

Computer Skills

Fluent in C++, X Windows, OSF/Motif, UNIX, HTML. Experience with Java, Perl, Smalltalk, FORTRAN, Scheme. Platforms include SUN, SGI, Macintosh, Sequent, IBM, DEC.

PUBLICATIONS

Refereed Conferences

Jerding, Dean F. and Stasko, John T., "The Information Mural: A Technique for Displaying and Navigating Large Information Spaces", Proceedings of the IEEE Symposium on Information Visualization, Atlanta, GA, October 1995, pp. 43-50.

Refereed Demonstrations

Jerding, Dean F. and Stasko, John T., "Using Information Murals in Visualization Applications", Proceedings of the Symposium on User Interface Software and Technology (Demonstration), Pittsburgh, PA, November 1995, pp. 73-74.

Invited Presentations

Doctoral Symposium, Conference on Object-Oriented Programming Systems, Languages, and Applications, October 1996.

Doctoral Consortium, ACM Conference on Computer-Human Interaction, April 1996.

Technical Reports

Jerding, Dean F. and Stasko, John T., "The Information Mural: Increasing Information Bandwidth in Visualizations", Graphics, Visualization, and Usability Center, Georgia Institute of Technology, Atlanta, GA, Technical Report GIT-GVU-96-25, October 1996.

Jerding, Dean F., Stasko, John T., and Ball, Thomas. "Visualizing Message Patterns in Object-Oriented Program Executions", Graphics, Visualization, and Usability Center, Georgia Institute of Technology, Atlanta, GA, Technical Report GIT-GVU-96-15, May 1996.

Jerding, Dean F. and Stasko, John T., “Using Visualization to Foster Object-Oriented Program Understanding”, Graphics, Visualization, and Usability Center, Georgia Institute of Technology, Atlanta, GA, Technical Report GIT-GVU-94-33, July 1994.

HONORS AND ACTIVITIES

Trainee mentor, NSF Graduate Research Traineeship in Human-Computer Interaction, 1995-1996
Student volunteer, IEEE Visualization ‘95
Association for Computing Machinery
Tau Beta Pi National Engineering Honor Society
Eta Kappa Nu National Electrical Engineering Honor Society
Sigma Pi Fraternity, University of Virginia, Community Service Chairman 1991
Eagle Scout, Boy Scouts of America
Enjoy weightlifting, basketball, and golf (some of the time)