

Harry Hochheiser

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CURRENT POSITION	Towson University , Towson, Maryland, USA Assistant Professor, <i>Department of Computer and Information Sciences</i>	
EDUCATION	University of Maryland , College Park, Maryland USA <i>Department of Computer Science</i>	
	Ph.D., May 2003	
	<ul style="list-style-type: none"> • Dissertation: "Interactive Graphical Querying of Time Series and Linear Sequence Data Sets" • Advisor: Ben Shneiderman 	
	Massachusetts Institute of Technology , Cambridge, Massachusetts USA <i>Department of Electrical Engineering and Computer Science</i>	
	M.S./B.S., February 1991	
	<ul style="list-style-type: none"> • Thesis: "A Schezoid Compiler for P-RISC" • Advisor: Rishiyur S. Nikhil 	
RESEARCH EXPERIENCE	National Institute on Aging, Laboratory of Genetics , Baltimore, Maryland USA	
	<i>Postdoctoral Researcher, Image Informatics and Computational Biology Unit</i>	July 2003-July 2006
	Design and development of information visualization applications for microscopy informatics, as part of the Open Microscopy Project (http://www.openmicroscopy.org).	
	University of Maryland , College Park, Maryland USA	
	<i>Graduate Student, Department of Computer Science</i>	August 1998-May 2003
	Dissertation topic: Information visualization for time series data sets. Tufts Medical School , Boston, Massachusetts USA	
	<i>Research Staff, Department of Rehabilitation Medicine</i>	May 1991-September 1993
	Implemented data collection and analysis software for an investigation of alternative computer interfaces for people with speech and motor disabilities.	
	Massachusetts Institute of Technology , Cambridge, Massachusetts USA	
	<i>Graduate Student, Laboratory for Computer Science</i>	January 1990-January 1991
	Developed a compiler for the P-RISC architecture, for an investigation of compilation techniques for highly-parallel computers.	
PROFESSIONAL EXPERIENCE	IBM T.J. Watson Labs , Hawthorne, New York USA	
	<i>Summer Intern</i>	Summer 1999
	Developed prototype multimedia visualization tool for display of a catalog of musical compositions by Philip Glass.	

H. Systems, Princeton, New Jersey USA

Self-Employed Consultant

January 1996-August 1998

Developed solutions for Internet companies. Implemented database-driven mail servers for Unix environments, Apache extensions for providing personal web pages, and customized SMTP and IMAP mail servers. Participated in development of prototype system for IP-PSTN telephony services.

AT&T Bell Labs, Murray Hill, NJ USA

Software Developer

May-December 1995

Implemented and tested components of World Wide Web client software for library information system, including integration with Z39.50 database searches.

Massachusetts General Hospital, Boston, Massachusetts USA

Software Developer, Department of Biomedical Engineering

October 1993-May 1995

Developed a large-scale networked equipment tracking system. Designed and implemented equipment repair database. Administered department's computers, networks, and Internet resources.

JOURNAL ARTICLES Goldberg, I., Allan, C., Burel, J.-M., Creager, D., Falconi, A., Hochheiser, H., Johnston, J., Mellen, J., Sorger, P., and Swedlow, J. 2005. The Open Microscopy Environment (OME) Data Model and Markup Language: Open Tools for Informatics and Quantitative Analysis in Biological Imaging. *Genome Biology* 6(5), R47.

Hochheiser, H., and Shneiderman, B. 2004. Dynamic Query Tools for Time Series Data Sets: Timebox Widgets for Interactive Exploration. *Information Visualization* 3:1-18.

Hochheiser, H. 2002. The Platform for Privacy Preference as a Social Protocol: An Examination within the U.S. Policy Context. *ACM Transactions on Internet Technology* 2(4): 276-306.

Shneiderman, B. and Hochheiser, H. 2002. Universal Usability as a Stimulus to Advanced Interface Design. *Behaviour & Information Technology* 20(5): 367-376.

Hochheiser, H. and Shneiderman, B. 2001. Using Interactive Visualizations of WWW Log Data to Characterize Access Patterns and Inform Site Design. *Journal of the American Society for Information Systems* 54(4):331-343.

Hochheiser, H. and Shneiderman, B. 2000. Performance Benefits of Simultaneous over Sequential Menus as Task Complexity Increases. *International Journal of Human-Computer Interaction* 12(2): 173-192.

CONFERENCE PAPERS

Jerome, G.J., Durm, J., Hochheiser, H., Appel, L.J. Accessibility of Physical Activity Promotion Websites For Persons With Visual Impairments. 2nd International Congress on Physical Activity and Public Health, Amsterdam, the Netherlands, April 2008.

Hochheiser, H. and Goldberg, G. 2006. Quasi-Hierarchical, Interactive Navigation of Images and Meta-Data in the Open Microscopy Environment. 2006 IEEE International Symposium on Biomedical Imaging.

Johnston, J., Nagaraja, A., Hochheiser, H., and Goldberg G. 2006. A Flexible Framework for Web Interfaces to Image Databases: Supporting User-Defined Ontologies and Links to External Databases. 2006 IEEE International Symposium on Biomedical Imaging.

Keogh, E., Hochheiser, H. and Shneiderman, B. 2002. An Augmented Visual Query Mechanism for Finding Patterns in Time Series Data. Fifth International Conference on Flexible Query Answering Systems, Lecture

Notes in Artificial Intelligence #2522, 240-251.

Hochheiser, H. and Shneiderman, B. 2001. Interactive Exploration of Time Series Data. Discovery Science 2001, Lecture Notes in Artificial Intelligence #2226, 441-446.

Hochheiser, H. and Shneiderman, B. 2000. Coordinating Overviews and Detail Views of WWW Log Data. Workshop on New Paradigms in Information Visualization and Manipulation (NPIVM 2000), ACM Press.

Hochheiser, H. 2000. Browsers with Changing Parts: A Catalog Explorer for Philip Glass' Website. Proceedings ACM Designing Interactive Systems (DIS 2000), ACM Press.

Hochheiser, H. 2000. Indirect Threats to Freedom and Privacy: Governance of the Internet and the WWW. Paper and Panel, Computers, Freedom, and Privacy 2000, ACM Press.

Hochheiser, H. 2000. Principles for Privacy Protection Software. Computers, Freedom, and Privacy 2000: Workshop on Freedom and Privacy by Design, ACM Press.

Hochheiser, H. and Shneiderman, B. 1999. Understanding Patterns of User Visits to Web Sites: Interactive Starfield Visualizations of WWW Log Data. Proceedings ASIS '99 Annual Conference, ASIS Press.

Hochheiser, H., Goodenough-Trepagnier, C., and Rosen, M.J. 1993. A Model for the Evaluation and Selection of Adaptive Computer Interfaces. Proceedings of RESNA International, 1993, RESNA Press.

Goodenough-Trepagnier, C., Hochheiser, H., Rosen, M.J., and Chang, H.P. 1992. Assessment of Dysarthric Speech for Computer Control Using Speech Recognition: Preliminary Results. Proceedings of RESNA International, 1992, RESNA Press.

INVITED PAPERS

Sauer, G., Holman, J., Lazar, J., Hochheiser, H., and Feng, J. 2008 Accessible Privacy and Security: A Universally Usable Human-Interaction Proof. Universal Access in the Information Society, *under review*.
Hochheiser, H., and Lazar, J. 2008. HCI and societal issues: a framework for engagement. International Journal of Human-Computer Interaction, 23(3), 339-374.

Hochheiser, H., and Yanowitz J. 2007. If I Only Had a Brain: Exploring Mouse Brain Images in the Allen Brain Atlas. Biology of the Cell, 99(7), 403-409.

Hochheiser, H., Baehrecke, E.H., Mount, S.M., and Shneiderman, B. 2003. Dynamic Querying for Pattern Identification in Microarray and Genomic Data. Proceedings IEEE Multimedia Conference and Expo, July 2003, Baltimore, MD.

INVITED BOOK CHAPTERS

Hochheiser, H., Eliceiri, K., and Goldberg. I. 2007. Visualization of Biological Data. In Lengauer, T., Ed., *Bioinformatics: from Genomes To Therapies*. Wiley-VCH-Weinheim.

Hochheiser, H. 1997. Workplace Database Systems: Difficulties of Data Collection and Presentation. In Friedman, B., Ed., *Human Values and the Design of Computer Technology*. Cambridge: Cambridge University Press/CSLI, 1997.

OTHER WRITING

Lazar, J., Johnson, J., and Hochheiser, H. Policy at the Interface: HCI and Public Policy. 2005. ACM Interactions November-December 2005, 12(6), 13-14.

Hochheiser, H., Bederson, B., Johnson J., Karat, C-M., and Lazar, J. 2004. The Need for Usability of

Electronic Voting Systems: Questions for Voters and Policy Makers. Comments prepared for the National Academy of Sciences.

Hochheiser, H. and Shneiderman, B. 2001. Universal Usability Statements: Marking the Trail for All Users. ACM Interactions 8(2):16-18.

TEACHING

Towson University, Towson, Maryland, USA

- Introduction to Computer Science I
- Introduction to Computer Science II
- Design and Analysis of Algorithms
- Graphics: Information Visualization
- Distributed Information Systems: Advanced Web Development
- Human Factors & Human Computer Interaction

US Patent and Trademark Office, Arlington, Virginia USA

Tutorial (with Catherine Plaisant)

September 2002

Co-taught a one-day seminar on Information Visualization for patent examiners.

TALKS

Voting: The Evolving Political and Technical Landscape.

- ACM Washington DC Chapter, September 2008.

Bioinformatics Visualization: Advanced User Interfaces for Data Exploration and Interpretation

- Towson University Molecular Biology, Biochemistry, and Bioinformatics Seminar, November 2006

Interactive Visualizations of Bioinformatics Data

- Towson University Molecular Biology, Biochemistry, and Bioinformatics Club, October 2006

Information Visualization for Biological Insight: Interactive Querying of Linear Sequence and Time Series Data

- National Cancer Institute, April 2005

Dynamic Query Tools for Analysis and Interpretation of Time Series Data

- U.S. Census Bureau, March 2005

Interactive Visualization and Exploration of Time Series and Other Linear Sequences

- University of Maryland, Math Department Statistical Seminar Series, March 2004

Interactive Visualization and Querying of Linear Sequences

- University of Maryland Baltimore County, Department of Information Systems, October 2003.

Interactive Exploration of Gene Expression and Nucleotide Sequence Datasets

- Imaging Science and Information Systems Research Center, Georgetown University Medical Center, April 2003.

Interactive Visualization and Querying of Linear Sequences

- Virginia Polytechnic Institute, Department of Computer Science, December 2002.

PANELS,
PRESENTATIONS,
DEMONSTRATIONS
AND WORKSHOPS

Hochheiser, H., Feng, J., Lazar, J. Taylor, A., and Riccobono, M. The Symposium on Accessible Privacy and Security. ACM Symposium on Usable Privacy and Security, 2008.

Lazar, J., Hochheiser, H., Johnson, J., Karat, C.-M., Bederson, B. B. 2008. CHI Policy Issues Around the World. Panel, ACM Conference on Human Factors in Computing Systems, 2008.

Bederson, B., Lazar, J., Johnson, J., Hochheiser, H., and Karat, C-M. 2006. Workshop on SIGCHI Public Policy. Workshop, ACM Conference on Human Factors in Computer Systems, 2006.

Hochheiser, H., and Goldberg, I. 2005. Towards Interactive Exploration of Images, Meta-Data, and Analytic Results in the Open Microscopy Environment. IEEE International Workshop on BioImage Data Mining and Informatics.

Hochheiser, H., and Shneiderman, B. Dynamic Query Tools for Analysis and Interpretation of Time Series Data. 9th INFORMS Computing Society Conference, January 2005.

Lazar, J., Bederson, B., Hochheiser, H., Johnson, J., and Karat, C-M. 2005 Making an Impact in your Community. HCI and US Public Policy. Special Interest Group, ACM Conference on Human Factors in Computer Systems 2005, Extended Abstracts, ACM Press.

Hochheiser, H. 2002. Interactive Querying of Time Series Data. Doctoral Consortium ACM Conference on Human Factors in Computer Systems 2002, Extended Abstracts, ACM Press.

Hochheiser, H. and Shneiderman, B. 2002. A Dynamic Query Interface for Finding Patterns in Time Series Data. Demonstration, ACM Conference on Human Factors in Computer Systems 2002, Extended Abstracts, ACM Press.

Hochheiser, H. and Johnson, C. 1998. Domain Names on the Internet: Context, Politics, and Technology. ACM Policy '98, pre-conference workshop.

POSTERS AND
WORKSHOP PAPERS

Hochheiser, H., Feng, J., and Lazar, J. Challenges in Universally Usable Privacy and Security The Symposium on Accessible Privacy and Security. ACM Symposium on Usable Privacy and Security, 2008.

Sauer, G., Hochheiser, H., Feng, J., and Lazar, J. Towards a Universally Usable CAPTCHA, The Symposium on Accessible Privacy and Security. ACM Symposium on Usable Privacy and Security, 2008.

Hochheiser, H.S., Allan, C., Burel, J., Creager, D. Eliceri, K.W., Falconi, A., Goldberg, I.G., Rueden, C., Sorger, P.K., and Swedlow, J.R. The Open Microscopy Environment: Informatics, Visualization and Quantitative Analysis American Society for Cell Biology, 2004 Annual Meeting, December 2004.

Goldberg, I., David, L., Hochheiser, H., Johnston, J., Orlov, N., Creager, D., Hughes, B., Mellen, J., Burel, J-M., Allan, C., Falconi, A., Brauner, E., Sorger, P., and Swedlow, J. OME: Image Informatics in a Post-Genomic World. American Society for Cell Biology, 2003 Annual Meeting, December 2003.

Hochheiser, H and Shneiderman, B. 2002. Interactive Poster: Visual Queries for Finding Patterns in Time Series Data. IEEE Information Visualization 2002.

FUNDED PROPOSALS CPATH CDP: Piloting Pathways for Computational Thinking in a General Education Curriculum (co-PI, C.

Dierbach PI) \$139,981, NSF Information & Intelligent Systems, CISE Pathways to Integrated Undergraduate Computing Education (CPATH), 9/1/2008 -8/31/2010.

Evaluating Menu Selection Task Performance of Blind Users of Screen Readers (J. Lazar, co-PI). \$10,882, Johns Hopkins University Bloomberg School of Public Health, NIOSH Education and Research Center Pilot Project Research Training Award, \$8,000 funded December 2006.

PENDING PROPOSALS Building Security in: Injecting Security throughout the Undergraduate Computing Curriculum (with C. Turner, B. Taylor, M. O'Leary, and S. Azadegan, co-PIs) \$497,075 NSF Division of Undergraduate Education, Course, Curriculum, and Laboratory Innovation, submitted January 2008.

A Transitional Language Approach for Engaging Students in Introductory Computer Science Courses (co-PI, C.Dierbach PI) \$113,097 NSF Division of Undergraduate Education, Course, Curriculum, and Laboratory Innovation, submitted May 2008.

CAREER: Universally Usable Privacy and Security \$433,534 NSF Division of Information & Intelligent Systems, Human-Centered Computing, submitted July 2008.

HONORS AND AWARDS

Selected for Doctoral Consortium, ACM Special Interest Group on Computer-Human Interaction, 2002.

America Online Fellowship in Human-Computer Interaction, 2000-2003.

Merit Fellowship in Computer Science, Department of Computer Science, University of Maryland, 1998-2000.

PROGRAM COMMITTEES

International Conference on Coordinated & Multiple Views in Exploratory Visualization, 2006.

IEEE Information Visualization Symposium, 2007, 2008.

International Symposium on Visual Computing, 2008.

SPIE Visualization and Data Analysis 2009

REVIEWING

ACM SIGCHI Conference on Human Factors in Computer Systems 2004-2007

Conference on Visualization and Data Analysis, 2007

Communications of the ACM

IEEE Transactions on Visualization and Computer Graphics

ACM User Interface Software and Technology 2004-2005

ACM Transactions on Human-Computer Interaction

IEEE Software

Information Visualization

IEEE Information Visualization Symposium 2004-2006

PROPOSAL
REVIEWING
SERVICE

National Science Foundation - various.

Towson University:

- Web Accessibility Advisory Task Group, 2007-present.
- Junior Faculty Committee, 2007-Present,
- Graduate Studies Committee, 2007-Present.

USACM Public Policy Committee, Member, 2002-present. Member, executive committee, 2005-present.

Privaterra, Member, Board of Advisors, 2002-2004.

IEEE-USA Committee on Communications & Information Policy, Member, 2000-2003.

Computer Professionals for Social Responsibility, Member-at-Large, Board of Directors 1997-2003. Board advisory committee, 2005.

University of Maryland, Department of Computer Science Education Committee, Graduate Student Representative, 2000-2002.