

# Lester D. Nelson

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408.876.0996  
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**Objective** Searching for opportunities in innovative design of interactive technologies, taking advantage of my experiences from concept development through deployment to people

**Experience** **Senior Research Scientist, Palo Alto Research Center (PARC), Palo Alto, CA, 2004 – Present**

- Research focused on end-user innovations and platform/system integration in response to changing requirements (Web 2.0 mashups, adaptable application/service design), usable access control, and mobile and ubiquitous social technologies and social annotation (interactive public displays, polite information flows) resulting in prototypes, intellectual property, and publications.
- Management consulting (including expertise in software development practices, tools, and methodologies) and customer-centered research (fieldwork and design intervention for supporting communication and collaboration in distributed software teams).

**Senior Research Scientist, FX Palo Alto Laboratory, Palo Alto, CA, 1995 – 2004**

- Innovation and evaluation of new mobile and ubiquitous computing technologies. This produced intellectual property, prototypes for evaluation and demonstration, technology transfer to product groups, and communication of research results, including international conferences talks (CHI, SIGGRAPH, UIST). Products included interactive public displays for information sharing both online and in physical places (cafés and offices), and physically embodied interfaces for manipulating digital media presentations. Prototypes and patents included improvements for public cell phone use and desktop support of conversations over digital content.

**Reengineering Project Manager, Lockheed Research & Development Division, Palo Alto, CA, 1994 – 1995**

- Managed and conducted projects in applying programming language transformation technologies to refurbish legacy software

**Software Systems Consultant, Lockheed Australia, Melbourne, Australia, 1991-1993**

- Established and provided training for software development practices and tools for a Lockheed/Telecom-Australia joint venture company building the Jindalee Over-The-Horizon Radar Network.

**Data Systems Engineer, Lockheed Research & Development Division, Palo Alto, CA, 1988-1991**

- Research and development on practices and tools for software reuse and software engineering for large, mission critical systems, including computer aided software engineering and object oriented programming for corporate and government projects.

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## *Experience continued*

**Senior Associate Programmer, IBM Corporation, Owego, NY, 1983-1988**

- Designed, implemented, and tested software for large mission critical defense systems.

**Programmer, Mitchell Systems, Sudbury, MA, 1979**

- Implemented and tested software and hardware configurations for critical path analysis logistical applications.

**Computer Consultant, Trinity College, Hartford, CT, 1977-1979**

- Designed, implemented, and tested software and hardware configurations for psychology and physiology experiments.

## *Education*

**State University of New York, Binghamton, New York, 1985-1987**

38 Graduate Credits, GPA 4.0

Area of Concentration: System Science/Modeling and Simulation.

**University of Wisconsin, Madison, Wisconsin, 1982**

M.S. in Computer Science

Area of Concentration: Mathematical Programming.

**Trinity College, Hartford, Connecticut, 1979**

B.S. in Mathematics and Computing Major Coordinated with Engineering

## *Inventions*

**US Patents Granted, 2001-present, 7106852, 7089278, 7013279, 6992702, 6941342, 6823184, 6773177, 6732915, 6580438, 6509909, 6320496, 6195093, 6175954; 7 others pending.**

## *Programming*

Project development in Ada, Basic, C, C++, C#, Dynamo, Focal, Fortran, HTML/CGI, Java, Javascript, JSP, Jovial, Lisp, Modula, Pascal, Perl, PHP, Proto+, Refine, Ruby on Rails, SQL/mysql, TCL/Tk, Visual Basic, XML/XQUERY/XSLT, and low level languages (DEC PDP11 Assembler, Advance Radar Processor microcode, 1750A Assembler). Application programming in DEC VMS, RSX11, IBM VM/CMS, Palm OS, Windows 95/98/NT/XP, UNIX. Systems programming experience in DEC-RT11, RSTS.

## *Activities*

**Member, Association of Computing Machinery (ACM)**

## *Awards*

- PARC Outstanding Performance Delivering Results Award, 2006
- FX Palo Alto Laboratory Significant Achievement Awards, 1996, 1999, 2001, 2004
- Lockheed Corporation Pursuit of Excellence Award, 1994
- President's Fellow, Trinity College, 1979

- Publications*
- Nelson, L. D.; Churchill, E. F.; Mapmail: Restructuring an Email Client for Use in Distributed Teams, Work-in-Progress Report, CHI '07 Extended Abstracts of Conference on Human Factors in Computing Systems (CHI 2007); April 2007.
  - Churchill, E. F.; Nelson, L. D., Interactive Community Bulletin Boards as Conversational Hubs and Sites for Playful Visual Repartee, Eighth Annual Workshop and Minitrack on Persistent Conversation, Hawai'i International Conference on Systems Science (HICSS), January 2007.
  - Churchill, E. F.; Nelson, L. D., From Media Spaces to Emplaced Media: Digital Poster Boards and Community Connectedness, Workshop on Media Space, ACM Conference on Computer Supported Cooperative Work, 2006.
  - Nelson, L. D.; Churchill, E. F. Mash Me Up, Mash Me Down: Restructuring Email for Content Sharing and Collaboration in Distributed Teams, Workshop on Mash-ups and CSCW, ACM Conference on Computer Supported Cooperative Work, 2006.
  - Nelson, L. D.; Churchill, E. F., Repurposing: Techniques for reuse and integration of interactive systems, Proceedings of the 2006 IEEE International Conference on Information Reuse and Integration, pp. 490-495, 2006.
  - Churchill, E. F.; Nelson, L. D.; Hsieh, G. Café life in the digital age: augmenting information flow in a café-work-entertainment space, Experience Report, CHI '06 Extended Abstracts of Conference on Human Factors in Computing Systems (CHI 2006); 2006.
  - Churchill, E.F., Nelson, L., Sokoler, T., Tools that Tell Tales: Bridging Context Seams by Digitally Annotating Physical Artifacts, Workshop on Smart Objects, The Seventh International Conference on Ubiquitous Computing, UBICOMP 2005, Tokyo, Japan, September 2005.
  - Nelson, L., Churchill, E.F., User Experience of Physical-Digital Object Systems: Implications for Representation and Infrastructure, Workshop on Smart Objects, The Seventh International Conference on Ubiquitous Computing, UBICOMP 2005, Tokyo, Japan, September 2005.
  - Bobrow, D., Cheslow, B., Churchill, E., Nelson, L., Whalen, J., Conversation Support in a Collaboration Space for a Distributed Workgroup, Workshop Paper, Workshop on Beyond Threaded Conversation, CHI 2005, Portland, OR, April 2, 2005.

## *Publications continued*

- Sharing Multimedia Content with Interactive Displays: A Case Study, Elizabeth Churchill, Les Nelson, Laurent Denoue, Jonathan Helfman, and Paul Murphy, ACM DIS 2004, Cambridge, August 1-4, 2004.
- Digital Graffiti: Public Annotation of Multimedia Content, Scott Carter, Elizabeth Churchill, Laurent Denoue, Jonathan Helfman, and Les Nelson, CHI 2004, Vienna, Austria, April 24-29, 2004.
- Goey Interfaces: An Approach for Rapidly Repurposing Digital Content, Les Nelson, Elizabeth Churchill, Laurent Denoue, Jonathan Helfman, and Paul Murphy, CHI 2004, Vienna, Austria, April 24-29, 2004.
- Blending Digital and Physical Spaces for Ubiquitous Community Participation, Elizabeth Churchill, Andreas Girgensohn, Les Nelson, and Alison Lee, Communications of the ACM, February 2004, Vol. 47, No. 2, pp. 38-44 (
- THE PLASMA POSTER NETWORK Social Hypermedia on Public Display, Elizabeth Churchill, Les Nelson, Laurent Denoue, Paul Murphy, and Jonathan Helfman, In Public and Situated Displays. Social and Interactional Aspects of Shared Display Technologies. K. O'Hara, M.Perry, E. Churchill and D. Russell (Eds) London: Kluwer Academic Publishers.
- A fast, interactive 3D paper-flier metaphor for digital bulletin boards, Laurent Denoue, Les Nelson, and Elizabeth Churchill, UIST 2003.
- Palimpsests on Public View: Annotating Community Content with Personal Devices, Scott Carter, Elizabeth Churchill, Laurent Denoue, Jonathan Helfman, Paul Murphy, and Les Nelson, UBICOMP, Seattle, October 12-15th, 2003.
- Multimedia Fliers: Informal Information Sharing With Digital Community Bulletin Boards, Elizabeth Churchill, Les Nelson, and Laurent Denoue, Communities and Technologies, Amsterdam, The Netherlands, September 2003.
- The Plasma Poster Network: Posting Multimedia Content in Public Places, Elizabeth Churchill, Les Nelson, Laurent Denoue, and Andreas Girgensohn, Human-Computer Interaction INTERACT '03, IOS Press, pp. 599-606, 2003.
- Weaving Between Online and Offline Community Participation, Elizabeth Churchill, Andreas Girgensohn, Les Nelson, and Alison Lee, Human-Computer Interaction INTERACT '03, IOS Press, pp. 729-732, 2003.
- Implementing a paper flier metaphor using cloth simulation, Laurent Denoue, Les Nelson, and Elizabeth Churchill, Siggraph 2003

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## *Publications continued*

- AttrActive Windows: Dynamic Windows for Digital Bulletin Boards, Laurent Denoue, Les Nelson, and Elizabeth Churchill, CHI 2003.
- AttrActive Windows: Active Windows for Pervasive Computing Applications, Les Nelson, Laurent Denoue, and Elizabeth Churchill, ACM Intelligent User Interface (IUI) 2003, Miami Beach, FL, pp 326, 2003.
- Low-Resolution Supplementary Tactile Cues for Navigational Assistance, Tomas Sokoler, Les Nelson, and Elin Pedersen, In proceedings of Mobile HCI 2002. (Pisa, Italy,2002), Springer-Verlag, Lecture notes in computer science #2411,pp.369-372, 2002.
- Tangibly Simple, Architecturally Complex: Evaluating a Tangible Presentation Aid, Elizabeth Churchill and Les Nelson, CHI2002
- Quiet Calls: Talking Silently on Mobile Phones, Les Nelson, Sara Bly, and Tomas Sokoler, In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, pp. 174-181, ACM Press, March 31-April 5, 2001, Seattle, WA, 2001.
- Expanding a Tangible User Interface, Elin Pedersen, Tomas Sokoler, and Les Nelson, In proceedings of DIS'2000, ACM Press, August 2000.
- Anchored Conversations. Chatting in the Context of a Document, Elizabeth Churchill, Jonathan Trevor, Sara Bly, Les Nelson, and Davor Cubranic, In CHI 2000 Conference Proceedings, ACM Press, pp. 454-461, 2000.
- CardGear: A Presentation System Manipulated with Paper Cards, Satoshi Ichimura, Les Nelson, and Elin Pedersen, In Proc. of Interaction 2000 Symposium. Information Processing Society of Japan, pp. 17 - 24. (in Japanese), 2000.
- Palette: A Paper Interface for Giving Presentations, Les Nelson, Satoshi Ichimura, Elin Pedersen, and Lia Adams, In Proceeding of the CHI 99 Conference on Human Factors in Computing Systems, ACM Press, pp. 354-361, 1999.
- Converting Information Management Systems to Relational Databases, Wolf Polak, Les Nelson, Timothy Bickmore, Proceedings of the Software Technology Conference '95, April 1995.
- Reuse Support for Ada Through Analysis of the Semantic Interface, Stephen W. Sherman, Les Nelson, et. al., First International Symposium on Environments and Tools for Ada, ACM, May 1990.

## *Patents Granted*

- US Patent 7,106,852, Telephone accessory for generating conversation utterances to a remote listener in response to a quiet selection
- US Patent 7,089,278, Anchored conversations: adhesive, in-context, virtual discussion forums

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## *Patents Granted Continued*

- US Patent 7,013,279, Personal computer and scanner for generating conversation utterances to a remote listener in response to a quiet selection
- US Patent 6,992,702, System for controlling video and motion picture cameras
- US Patent 6,941,342, Method for generating conversation utterances to a remote listener in response to a quiet selection
- US Patent 6,823,184 , Personal digital assistant for generating conversation utterances to a remote listener in response to a quiet selection, November 23, 2004.
- US Patent 6,773,177, Method and system for position-aware freeform printing within a position-sensed area, August 10, 2004
- US Patent 6,732,915, Systems and methods for controlling a presentation using physical objects, May 11, 2004.
- US Patent 6,580,438, Systems and methods for maintaining uniformity in a presentation environment, June 17, 2003.
- US Patent 6,509,909, Systems and methods for controlling a presentation using physical objects, January 21, 2003.
- US Patent 6,320,496, Systems and methods providing tactile guidance using sensory supplementation, November 20, 2001.
- US Patent 6,195,093, Systems and method for controlling a presentation using physical objects, February 27, 2001.
- US Patent 6,175,954, Computer programming using tangible user interface where physical icons (phicons) indicate: beginning and end of statements and program constructs; statements generated with re-programmable phicons and stored, January 16, 2001.

## *Patents Pending*

- US Application 20060111910, Personal computer and scanner for generating conversation utterances to a remote listener in response to a quiet selection
- US Application 20060041589, System and method for clipping, repurposing, and augmenting document content
- US Application 20050138614, Methods and systems for extending existing user interfaces
- US Application 20050071864, Systems and methods for using interaction information to deform representations of digital content
- US Application 20040119762, Systems and methods for freeform pasting
- US Application 20030051615, Method and system for position-aware freeform printing within a position-sensed area
- US Application 20020116516, Method and apparatus for management and representation of dynamic context

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## *Teaching Experience*

- University of Wisconsin, Madison, Wisconsin, Lecturer, Mathematical Programming Seminar, 1982, Developed instruction material and presented graduate seminar on Linear Programming.
- University of Wisconsin, Madison, Wisconsin, Teaching Assistant, 1979-1982, Developed instructional material and presented undergraduate course in Introduction to Computer Programming