

N I T I N S A W H N E Y

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E D U C A T I O N

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA (1998 - 2003)

Ph.D. MIT Program in Media Arts and Sciences, MIT Media Laboratory

Thesis: *Cooperative Innovation in the Commons: Rethinking Distributed Collaboration and Intellectual Property for Sustainable Design Innovation*

MASSACHUSETTS INSTITUTE OF TECHNOLOGY, Cambridge, MA (1996 - 1998)

M.S. MIT Program in Media Arts and Sciences, MIT Media Laboratory

Thesis: *Contextual Awareness, Messaging and Communication in Nomadic Audio Environments*

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, GA (1993 - 1996)

M.S. Information Design and Technology with Certificate in Management of Technology

Thesis: *Authoring and Navigating Video in Space and Time: An Approach Towards Hypervideo*

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, GA (1989 - 1993)

Bachelor of Industrial Engineering

School of Industrial and Systems Engineering

T E C H N I C A L S K I L L S

- Expertise with developing large-scale web-based collaboration platforms, designing multi-modal interaction systems (speech, video and gestural) and software applications for mobile computing.
- Experience in requirements analysis, project planning, systems integration, software engineering, client-server networking, GUI design, usability analysis, documentation and product deployment.
- Proficient with languages and development platforms including Java, C, C++, Perl, Tcl, XML, UNIX, Oracle/Sybase Database Admin, PL/SQL and SQL*PLUS, Matlab, Visual Basic, Isis and Lingo.

W O R K E X P E R I E N C E

MIT MEDIA LABORATORY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (2001 - 2003)

Human Design Group, Cambridge, MA

Developed *ThinkCycle*, a web-based collaboration platform and open knowledge repository for sustainable design innovations. It provides online community tools and shared team spaces for designers, domain experts and stakeholders to exchange, archive and peer-review evolving product design concepts. The system supports online content management, digital library, group access privileges, user personalization, messaging, file versioning and a custom search engine. Over 2000 users worldwide access and contribute hundreds of concepts, resources, projects and publications. Collaboration platform developed using the ACS open source framework, Oracle database, and AOLserver along with custom packages and servers written in Tcl, SQL, and Perl.
<http://www.thinkcycle.org>

MIT MEDIA LABORATORY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (1999 - 2001)

Speech Interface Group, Cambridge, MA

Developed *Aware Community Portals*, large responsive displays projected within shared public workspaces at the MIT Media Lab. The system used visual sensing of movement patterns to present relevant information extracted from online news sources and construct traces of people's social activity over time. Gestural interaction with the information display and social awareness of people's interests was facilitated via motion analysis, laser sensing and directed face capture from a network of cameras and sensors. The interactive display was developed using the Isis responsive media language with server-side applications written in Java, Perl, XML and C.
<http://www.media.mit.edu/~nitin/portals/>

MITSUBISHI ELECTRIC RESEARCH LABORATORY (Summer 1999)
Cambridge Research Lab, Cambridge, MA

Worked with researchers Matthew Brand and Michael Casey on auditory representations and machine learning techniques for mapping human voices between different speakers. Applied LPC analysis, vocal tract modeling, and harmonic+noise coding techniques to analyze and reconstruct natural sounding speech. Auditory analysis and data extraction done using Matlab and Perl.
<http://www.merl.com>

STARLAB (Summer 1998)
Agents and Wearable Computing Group, Brussels, Belgium

Worked with researcher Walter Van de Velde on *COMRIS*, a project funded by the I3 Esprit initiative of the European Commission. Designed dynamic simulation for distributed agent delivery of contextually relevant information to conference participants. Developed synthetic speech and audio interfaces for synchronized agent messages with wearable devices (using Java and XML).

MIT MEDIA LABORATORY, MASSACHUSETTS INSTITUTE OF TECHNOLOGY (1996 - 1998)
Speech Interface Group, Cambridge, MA

Developed *Nomadic Radio*, an audio-only wearable device for unified email and voice messaging. The interface combined speech recognition, synthetic speech, spatialized audio rendering and ambient audio cues for hands-free interaction and peripheral awareness of incoming messages. The system consisted of Java-based mobile clients and Unix servers written in Perl as well as speech recognition and synthesis modules written using the AT&T Watson Speech SDK.
<http://www.media.mit.edu/~nitin/NomadicRadio>

FUJI-XEROX PALO-ALTO RESEARCH LABORATORIES (Summer 1996)
Mobile Computing Research Group, Palo-Alto, California

Worked with researchers Lynn Wilcox and Bill Schilit on *Dynomite*, a dynamically organized ink and audio-based mobile notebook. It allowed handwritten notes synchronized with audio recording, as well as gesture recognition for easy annotation, indexing, search and capture of meeting transcripts. Design and development of the mobile pen/audio software interface using Visual C++. Awarded an International Patent: "System for capturing and retrieving audio data and corresponding hand-written notes", Xerox Corporation and Fuji Xerox Company, Ltd. Oct. 1999.
<http://www.fxpal.com>

GRAPHICS, VISUALIZATION AND USABILITY CENTER, GEORGIA TECH (1995 - 1996)
Future Computing Environments Group, Atlanta, Georgia

Graduate research assistant working with Prof. Gregory Abowd and Prof. Chris Atkinson on the *Classroom 2000* project. Developed pen-based annotation software (in Visual Basic) for electronic note taking and review on mobile computers and a large-scale display, the *LiveBoard*. The system captured annotations and generated web-based notes synchronized with recorded audio.
<http://www.cc.gatech.edu/fce/eclass/>

MELITA INTERNATIONAL CORPORATION (1992 - 1995)
Advanced Product Development, Norcross, Georgia

Developed software and database modules for a call-center telephony application using Sybase and Visual Basic (with ODBC and RPC) to provide a visual interface to time zone and area code management features for call-center administrators. Responsible for requirements analysis, object-oriented design, code development, usability testing and documentation.
<http://www.melita.com>

MICHAEL C. CARLOS MUSEUM (1993 - 1994)
Dept. of Education, Emory University, Atlanta, Georgia

Worked with Prof. Jay Bolter to perform technology assessment for an artifact/image capture and retrieval system to serve the needs of various departments of the museum. Prototyped and evaluated educational museum software with students at local schools.
<http://carlos.emory.edu>

SELECTED PUBLICATIONS

Nitin Sawhney, Saul Griffith, Yael Maguire and Timothy Prester. ThinkCycle: Sharing Distributed Design Knowledge for Open Collaborative Design. *International Journal of Technologies for the Advancement of Knowledge and Learning (TechKnowLogia)*, Jan 2002, Vol. 4 Issue 1. pp. 49-53.

Nitin Sawhney, Sean Wheeler and Chris Schmandt. Aware Community Portals: Shared Information Appliances for Transitional Spaces. *Springer-Verlag Journal of Personal and Ubiquitous Computing*, February 2001, Vol. 5, Issue 1. pp. 66-70.

Nitin Sawhney and Chris Schmandt. Nomadic Radio: Speech and Audio Interaction for Contextual Messaging in Nomadic Environments. *ACM Transactions on Computer-Human Interaction with Mobile Systems (TOCHI)*, Sept. 2000, Vol. 7 Issue 3. pp. 353-383.

Nitin Sawhney, David Balcom and Ian Smith. Authoring and Navigating Video in Space and Time. *IEEE Multimedia Journal*, October-December 1997, Vol. 4, Issue 4. pp. 30-39.

Lynn Wilcox, Bill Schilit and Nitin Sawhney. Dynamite: A Dynamically Organized Ink and Audio Notebook. *Proceedings of CHI '97, Conference on Human Factors in Computing Systems*, 1997.

Gregory D. Abowd, Chris Atkeson, Ami Feinstein, Cindy Hmelo, Rob Kooper, Sue Long, Nitin Sawhney and Mikiya Tani. Teaching and Learning as Multimedia Authoring: The Classroom 2000 Project. *Proceedings of the ACM Multimedia '96 Conference*, November 1996.

AWARDS AND ACTIVITIES

Awarded the **Martin Fellow for Sustainability**, Martin Family Foundation and the MIT Laboratory for Energy and Environment, 2002-2003. <http://fee.mit.edu/programs/martin/>

Founder and Program Co-Chair of *Development by Design* 2001/2002, International Conferences on Open Collaborative Design for Sustainable Innovation, held in cooperation with ACM SIGCHI, AGS, ICSID, MIT Media Lab and academic institutions in India. <http://www.thinkcycle.org/dydy02>

Co-founder of *ThinkCycle* at MIT (2000-2003), an academic non-profit initiative engaged in supporting distributed collaboration towards design challenges facing underserved communities and the environment. ThinkCycle seeks to create a culture of open source design innovation, with ongoing collaboration among individuals, communities and organizations around the world. www.thinkcycle.org

Nominated the Media Lab Asia Fellow, Govt. of India and MIT Media Laboratory, 2001-2002.
Nominated the British Telecom Fellow, British Telecom and MIT Media Laboratory, 1998-2000.

Awarded **International Patent**: "System for capturing and retrieving audio data and corresponding hand-written notes", Xerox Corporation and Fuji Xerox Company, Ltd. United States Patent 5970455, October 19, 1999. <http://web.media.mit.edu/~nitin/patents/US-Patent-5970455.htm>

Interviewed by the BBC for the documentary: Digital Planet 3. "CyberSouls", featuring the *Nomadic Radio* project, Jan 18, 1999. <http://www.open2.net/digitalplanet/souls/fmtv3.htm>

HyperCafe awarded among top interactive projects and showcased in the New Talent Pavilion at MILIA 97, Cannes, France, February 9-12, 1997. Award included travel and accommodation.

Awarded the **First Douglas Engelbart Best Paper Award** at the ACM SIGWEB Hypertext Conference for "HyperCafe: Narrative and Aesthetic Properties of Hypervideo", March 1996. The award carried a \$1,000 cash prize. <http://www.acm.org/sigweb/awards.html>

Volunteered with AID-Boston, a nonprofit chapter of the Association for India's Development. Worked on developmental projects with NGOs in India. Conducted project evaluations, field-visits, cultural events, fund-raising, and educational seminars at MIT. <http://www.media.mit.edu/~nitin/aid/>

REFERENCES AVAILABLE UPON REQUEST