

T. V. Raman
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Summary

I am an accomplished Computer Scientist with over 30 years of leadership experience in advanced technology development. During this time, I have authored 3 books and filed over 75 patents; my work on [eyes-free interaction](#) has been profiled in mainstream publications including the [New York Times](#) and [Scientific American](#). I presently work on enabling user-aware interfaces that AI-power in-the-moment *Assistance*; previously I led Accessibility for [Google Android](#) and [Google Chrome](#). I have leading-edge expertise in developing auditory interfaces for mobile devices and Web applications with a special focus on eyes-free interaction. Earlier, I led the definition of numerous W3C standards including XForms and Aural CSS.

Objective

Deliver technologies that enable ubiquitous, eyes-free access to the cloud from a wide variety of devices ranging from smart phones and tablets to wearables. Speech is the next dimension in user interfaces, and I am developing application frameworks that combine speech technologies with the power of the Cloud to deliver user-aware interfaces that enable anytime, anywhere access to one's personal assistant.

Work experience

- [Google](#), Mountain View, CA
Principal Research Scientist. Aug 2005–Present.
Director: Translate Research Multilinguality in the age of Generative LLM.
Personal Assistant User-Aware interfaces to enable in-the-moment assistance.
Android Access Led Accessibility from its inception to deliver many innovative end-user solutions.
Chrome Designed an accessibility solution for Chrome built entirely of [Web technologies](#).
Accessible Search Built an innovative classifier for measuring Accessibility that is integrated into Google.
- IBM Research, [Almaden Research Center](#), San Jose, CA
Research Staff Member: Architect, Conversational Multimodal WWW. Aug 1999–Aug 2005.
XForms Authoring applications for the next generation WWW.
RDC Reusable Dialog Components to speech-enable the Web.
X+V Speech-enabling XHTML to create a *multimodal* Web.
- Adobe Systems, Advanced Technology Group, San Jose, CA
Senior Computer Scientist: Dynamic publishing on the Internet. Oct 1995–Aug 1999.
PDF2HTML Developed the PDF to HTML translator bundled with major Web search engines.
XML Metadata Developed an XML-based virtual document architecture to enable content reuse.
- Digital Equipment Corporation, Cambridge Research Lab, Cambridge, MA
Research Staff: Retriever –A Multimodal Web Interface. Feb 1994–Oct 1995.
- Intel Corporation, Intel Architecture Labs, Hillsboro, OR
Summer Associate: Prototyped an email telephony interface. Jun–Aug 1993.
- Xerox Palo Alto Research Center, Palo Alto, CA
Summer Associate: Prototyped a new reading machine architecture. May–Aug 1991.

Education

- [Cornell University](#), Ithaca, NY
– **PhD. Applied Mathematics:** Aug 1989–Jan 1994.
Awarded the [ACM Doctoral Dissertation Award, 1994](#).
Thesis: Audio System For Technical Readings. Adviser: Prof. David Gries, Computer Science.

- MS Computer Science: May 1992.
- Indian Institute of Technology, Bombay, India: MS Computer Science: GPA: 9.78/10.00 July 1989.
- University of Pune, Pune, India: BA Mathematics: May 1987.

Selected Awards and Honors

- Indian Institute of Technology, Bombay [Distinguished Alumnus Award](#) March 2018.
- Computerworld Award Smithsonian Institution [Emacspeak: Complete Audio Desktop.](#) April 1999.
- Association of Computing Machinery (ACM) [Doctoral Dissertation Award](#) 1994.
- Intel Graduate Fellowship Intel Corporation, CA 1992.
- Graduate Fellowship Cornell University. 1989.
- President's Silver Medal Indian Institute of Technology, Bombay. 1989.
- Sir Cusrow Wadia Gold Medal University of Pune. 1987.
- Sir Ness Wadia Gold Medal Wadia College, Pune. 1984.

Selected Books, patents and Articles

You can locate all of my publications via [Google Scholar](#).

- T. V. Raman. [Toward 2 w, beyond web 2.0.](#) *Communications of the ACM*, 52(2):52–59, 2009.
- T. V. Raman. *XForms — XML Powered Web Forms.* Addison Wesley, 2003.
- T. V. Raman. *Audio System For Technical Readings.* LNCS 1410, Springer Verlag, 1998.
- T. V. Raman. *Auditory User Interfaces.* Kluwer Academic Publishers, 1997.
- T. V. Raman. Thinking Of Mathematics. [An Essay On Eyes-Free Computing.](#)
- T. V. Raman. Netsurfing without a monitor. *Scientific American*, March 1997. [Special Internet Edition.](#)
- T. V. Raman. [User interface —a means to an end.](#) *Dr. Dobb's Journal*, August 1997.
- Wayt Gibbs. [Profile: T. V. raman: Envisioning speech.](#) *Scientific American*, September 1996.
- Brian Hayes. [Speaking of mathematics.](#) *American Scientist*, 84(2), March–April 1996.
- T. V. Raman. Cascaded speech style sheets. *WWW6 Conference, CA.*, April 1997.
- T. V. Raman. [Audio System for Technical Readings.](#) PhD thesis, Cornell University, May 1994.
- T. V. Raman. Emacspeak –a speech interface. *CHI96*, April 1996.
- T. V. Raman. *Generating audio renderings of digitized works.* Cornell. [U.S. Patent 5,572,625](#), 1996.
- T. V. Raman and Jim Larson. *Telephone access system.* Intel Corporation. [U.S. Patent 5,825,854](#), 1998.
- T. V. Raman. *Multimodal information presentation system.* DEC. [U.S. Patent 5,748,186](#) 1998.
- T. V. Raman. *Data stream processing on networks.* Adobe Systems. [U.S. Patent 6,134,598](#), 2000.
- T. V. Raman and John Warnock. *Digitized speech and text.* Adobe Systems. [U.S. Patent 6,151,576](#), 2000.
- T. V. Raman. *Document description format.* Adobe Systems. [U.S. Patent 6,249,794](#), 2001.
- T. V. Raman. *Speech interface for computer application programs* DEC. [U.S. Patent 6,289,312](#), 2001.
- T. V. Raman, et al *Dialog management in a multimodal environment* IBM. [U.S. Patent 6,839,896](#), 2005.
- T. V. Raman et al. XForms 1.0 *W3c*, October, 2003. [XForms](#)
- T. V. Raman et al. [Adding Spoken Interaction To XHTML](#) *W3c*, December, 2001.
- T. V. Raman [Collecting Business Critical Information Using XForms](#) *XML Journal*, April, 2003.

Other Interests

My favorite hobby is [recreational mathematics](#). I enjoy working on puzzles, especially those that involve an intuitive feel for mathematics. One of the things I enjoyed doing the most in the early eighties was to solve the Rubik's cube faster than anyone else around me, on an average of about [thirty seconds](#)! During the last few years, discovering [Zome Systems](#) for building complex polyhedra has helped rekindle my interest in polyhedral geometry. I am also interested in linguistics and can speak about eight languages, including French, German and several Indian languages.