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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 provide 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 — backed by Natural Language Technologies — 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.