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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 Natural Language 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.
  Principle Research Scientist Auditory User Interfaces.
  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 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.