

CURRICULUM VITAE**Richard Hodges**

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Career Biography (selected)

April 2004 - present

Principal Scientist, Plantronics Inc. (acquired Octiv Inc.)

Responsible for algorithm development for headphone signal processing: noise reduction, AEC, VAD, objective quality evaluation, etc. Developed Simulink-based telephony development platform which has seen wide intramural acceptance.

Jan 2000 - April 2004

VP Technology, Octiv Inc., Berkeley CA

Responsible for oversight of all new technology including digital, analog, and acoustical. Develop and implement new algorithms for audio signal processing and telecommunications.

Jan 95 - Jan 2000

Senior Engineer, Orban Inc., San Leandro CA

Develop and implement advanced algorithms for audio coding and processing

Feb 94 - Dec 95

Research Technologist, Gibson USA, Berkeley CA

Develop technology for the next generation of electronic musical instruments

June 1988 - Feb 94

Technology Sales, Motorola SPS, Sunnyvale CA

Work with major strategic customers to develop next-generation silicon technology for video compression, RF digital communication, DSP applications, and other areas

May 1985 - May 1988

VP Technology, ACT Networks, Westlake Village CA

I founded this company to develop and commercialize medium bit-rate real-time speech coding for voice/data telecommunication applications. ACT Networks became a publicly traded company of which I was a major stockholder.

Mar 1980 - Apr 1985

Senior Scientist, Votan, Fremont CA

Responsible for developing new technology in signal processing and artificial intelligence for analysis, recognition, and compression of human speech.

June 1975 - Feb 1980

Senior Scientist, Teknekron, Berkeley CA

Developed hardware and software for image processing, image coding, pattern recognition, real-time control

Sept 1969 - Aug 1973

Acting Assistant Professor, EECS dept., UC Berkeley

Taught courses in Computer Science and Artificial Intelligence.

Accomplishments in Technology (selected)

Represented Motorola SPS in the ISO/IEC MPEG international standards process, and helped Motorola define, develop, and market its strategy for silicon implementation of video compression

Conceived and implemented a low bit rate voice coding algorithm based on standard algorithms and proprietary algorithms which I invented, and managed development of products based on this algorithm through the stages of concept, prototype (hardware and software), financing, and commercialization. (ACT Networks)

Made significant contributions to artificial intelligence, including speaker-dependent and speaker-independent speech recognition and automated deduction

Implemented numerous technology projects:

- a new type of electronic musical instrument (US patent 3,948,138)
- hexaphonic nonlinear signal processing system for guitar
- image and signal processing: coding, noise & echo mitigation, etc.
- imbedded microprocessor system for trace chemical analysis
- gyroscope controlled 2-wheel self-balancing platform
- (and many others)

Patents Issued (others applied for)

- 3,948,138 A New Type of Musical Instrument
- 6,747,581 Techniques for Variable Sample Rate Conversion
- 7,236,929 Echo Suppression and Speech Detection Techniques
- 7,433,462 Techniques for Improving Telephone Audio Quality

Education

Graduate Studies, Mathematics, UC Berkeley, 1964-1972

Undergraduate Studies, Mathematics, Rice University, Houston, 1960-1964

Publications

W.W. Bledsoe and Richard Hodges, "A Survey of Automatic Theorem Proving," *Proceedings of AAAI-87 (Survey Papers)*, AAAI, 1987

"The MPEG Video Compression Standard," *Computer Design*, 1993

"Drum is the Ear of God: Africa's Inner World of Music," *Material for Thought* #13, Far West Press, San Francisco 1992

"The Quick and the Dead: The Souls of Man in Vodou Thought," *Material for Thought* #14, Far West Press, San Francisco 1995

"From the Mat to the Street: Judo and Life", *Material for Thought* #15, Far West Press, San Francisco 1998

"The Way of a Tourist," *Shambala Sun* Feb/Mar 1996

Foundation Course in African Music (with C. K. Ladzekpo), a popular WWW page at <http://www.cnmat.berkeley.edu/~ladzekpo/>

Areas of Proven Experience

Sound and image processing, coding, and recognition algorithms
Initiative and full range of skills in integrated development of innovative systems,
including algorithms, software, digital and analog electronics, and acoustical,
optical, and other technologies
Management of technical development teams
Working with internal and external customers on complex technology development
projects
Written and oral communications
WWW authoring and Webmastering
International standards development and deployment
Artificial intelligence methods

Computer Languages: Matlab, Simulink, C, C++, Java, Lisp, Fortran, Assembler, ...
Computer Systems: Windows, Mac, Unix, Symbolics, DEC-20, ...
Chips: x86, PPC, 68K, DSP56, TMS320, 6502, TMS99000, ...

Other Accomplishments and Interests

Fourth Degree Black Belt in Judo; winner of Gold Medal at the 2009 World Masters
Judo Tournament (see <http://r.hodges.home.comcast.net/~r.hodges/JudoMasters.html>)
Two-time winner of U.S. National championship

Advanced Class Amateur Radio License (KE6SO)

Percussion, Keyboard, and Woodwind musician

Amateur Violin Maker