

THURSDAY
MARCH 25, 2004

Scaife Hall Auditorium
Room 125

4:00 PM
Refreshments—3:30 PM



Richard Cox

VICE PRESIDENT OF RESEARCH, AT&T LABS

Richard V. Cox joined the Acoustics Research Department of Bell Laboratories in 1979. He has conducted research in the areas of speech coding, digital signal processing, analog voice privacy, audio coding, real-time signal processing implementations, speech recognition, and speech enhancement. He is well known for his work in speech coding standards. He collaborated on the low-delay CELP algorithm that became ITU-T Recommendation G.728 in 1992. He managed the ITU effort that resulted in the creation of ITU-T Rec. G.723.1 in 1995. In 1992 he was appointed Department Head of the Speech Coding Research Department of AT&T Bell Labs. In 1996 he joined AT&T Labs as Division Manager of the Speech Processing Software and Technology Research Department. In August 2000 he was appointed Speech and Image Processing Services Research Vice President. He is currently IP & Voice Services Research Vice President.

Dr. Cox is a Fellow of the IEEE and is Past President of the IEEE Signal Processing Society. In 1999 he was awarded the AT&T Science and Technology Medal and in 2000 the IEEE Third Millennium Medal.

For more information:
<http://www.ece.cmu.edu/seminar>

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ENHANCING SPEECH INTELLIGIBILITY USING VARIABLE-RATE TIME-SCALE MODIFICATION

The lack of perfect intelligibility is typically due to the confusability of certain consonant pairs that differ by the place of their articulation, e.g. /s/-/th/, /f/-/th/, etc. These consonants contain their main distinctive features during their coarticulation with adjacent phonemes. It is also well known that when talking to impaired listeners, speakers often slow down their speaking rates to improve the intelligibility. This suggests that temporal modification of telephone bandwidth speech might improve its intelligibility. In this talk a novel method is presented that succeeded in reducing the intelligibility error rate for telephone bandwidth speech. Our method resulted in a 26% reduction in error rate in a formal diagnostic rhyme test and a 35% reduction in the number of words having any number of listening errors associated with them. There is the potential that this method might also be used to decrease the phonetic error rate of automatic speech recognition systems as well.

JOINT WORK WITH NICKY CHONG-WHITE