UT DALLAS

Computer Science Colloquium &
Dallas Chapter of IEEE Signal Processing Society Present

Deception Detection from Speech: Automatic Methods vs. Human Judges

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ECSS 2.410

There has been considerable interest in recent years in automatic methods of detecting deception to supplement current human and polygraph approaches, especially using new sources of information, such as brain images, odor, and speech. We present results from studies of human and machine performance on a large corpus of deceptive and non-deceptive speech. We discuss the data collection paradigm, the features we trained our Machine Learning algorithms on, and our human perception experiments. Results show that our machine learning experiments predicting deception achieve performance which compares favorably with the performance of human judges on the same data and task. We also suggest that personality factors may be a key factor in successful human judgments, based on our perception studies. (This is joint work with Frank Enos at D. E. Shaw & Co., and with collaborators at SRI/ICSI, Constantine the Philosopher University, and the University of Colorado, Boulder.)

Julia Hirschberg is Professor of Computer Science at Columbia University. Her research focuses on prosody in speech generation and understanding, on speech summarization, emotional speech, and interaction in spoken dialogue systems. She has served as President of the International Speech Communication Association (ISCA), co-editor-in-chief of Speech Communication, and editor-in-chief of Computational Linguistics. She is a fellow of the American Association for Artificial Intelligence and an ISCA Fellow.

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