

Individual Differences in Deception and Deception Detection
in Spoken Dialogue

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Abstract: Spoken language processing (SLP) aims to teach computers to understand human speech. Automatic deception detection from speech is one of the few problems in AI where machines can potentially perform significantly better than humans, who can only detect lying around 50% of the time. In this talk, I will discuss my work on training computers to distinguish between deceptive and truthful speech, using acoustic-prosodic and lexical features. My work combines machine learning with insights from psychology and linguistics to develop robust techniques to detect deceptive speech. I will describe my work creating the largest corpus of deceptive speech, the Columbia X-Cultural Deception corpus. This corpus enabled experiments on a scale that has not been previously possible. I will then present the findings of a series of deception classification experiments with performance above 70% accuracy, as well as a detailed empirical study of spoken and linguistic indicators of deception. Finally, I will present a study of individual differences in gender, native language, and personality in deception, and how these differences can be used to improve automatic deception detection.

Bio: Sarah Ita Levitan is a fifth-year PhD student at Columbia University, advised by Dr. Julia Hirschberg. Her research is in spoken language processing, and her dissertation focuses on the problem of automatic deception detection from speech. She has presented her work at international conferences such as Interspeech, Speech Prosody, and NAACL. Sarah Ita is an NSF graduate fellow and an IGERT fellow, and has interned at Interactions LLC and Google Research.