Thursday, November 19th, 2pm ET
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Automatic analysis of speech communication: How Natural Language Processing and Machine Learning can contribute to clinical research

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Impaired communication has debilitating effects on patients with conditions, such as Primary Progressive Aphasia and stroke aphasia. Communication impairments result in disengagement from everyday activities, isolation, and trigger psychophysical reactions, including depression, and sleep disorders. Speech communication is usually defined in terms of discourse analysis and conversation analysis in language sciences. Nevertheless, the analysis of speech communication in the clinic is a time-consuming and laborious process because of the extreme wealth of information that is contained even in a single utterance (e.g., acoustic, phonological, and morphosyntactic). Recent developments in computational linguistics in conjunction with artificial intelligence methods, such as machine learning, provide powerful and efficient alternatives to traditional methods because they can provide objective measurements fast and accurately. In this talk, I will discuss our recent work and provide an overview of current developments in automated methods of discourse analysis, such as machine learning, signal processing, and natural language processing. Additionally, I will show how automatic markers of communication can complement other behavioral interventions, MRI, cognitive, and quality of life evaluations for the improvement of diagnosis, prognosis, and treatment choices in clinical practice.

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