Tongue Tracking System (TTS) for Speech Impairment, Diagnosis and Therapy (#6367)

A multi-functional tracking system (TTS) that tracks the tongue's position in real time

Georgia Tech inventors have developed a multi-functional, multi-modal tongue tracking system (TTS) that continuously tracks the tongue's position in real time and uses that information to measure, guide, and create speech. The TTS provides audiovisual biofeedback through displaying 3-D tongue movements as well as audible speech/non-speech cues, enabling fluid real-time interaction between the end-user (patient), therapist, a speech and language pathologist (SLP), and the system and therapist. By attaching a small magnetic tracer to the tongue and placing an array of magnetic sensors around the mouth, in addition to other peripheral sensors (microphone, cameras, etc.), TTS forms a comprehensive audiovisual biofeedback mechanism for diagnosing speech impairments and improving speech therapy while quantifying and recording progress.

Benefits/Advantages

- Wireless technology for diagnosing speech and language impairments, providing audio-visual biofeedback for therapy and silent-speech interfacing
- Allows users to see the motion of the tongue and visualize their speech
- Helps overcome speech imprecision

Potential Commercial Applications

- Adaptive assistive technology (AT) for speech disorder diagnostics and therapy
- Treatment for speech impairments from early stage development or cerebrovascular insults and diseases such as stroke, brain injury, Parkinson's disease, cerebral palsy, and motor speech disorders

Background/Context for This Invention

This invention generally relates to the field of speech and language pathology, speech therapy, and augmentative and alternative communication (AAC) interfaces. Such assistive technologies can help individuals with speech disabilities better communicate with others and express their needs, helping them to experience active, more independent, and satisfying lives.

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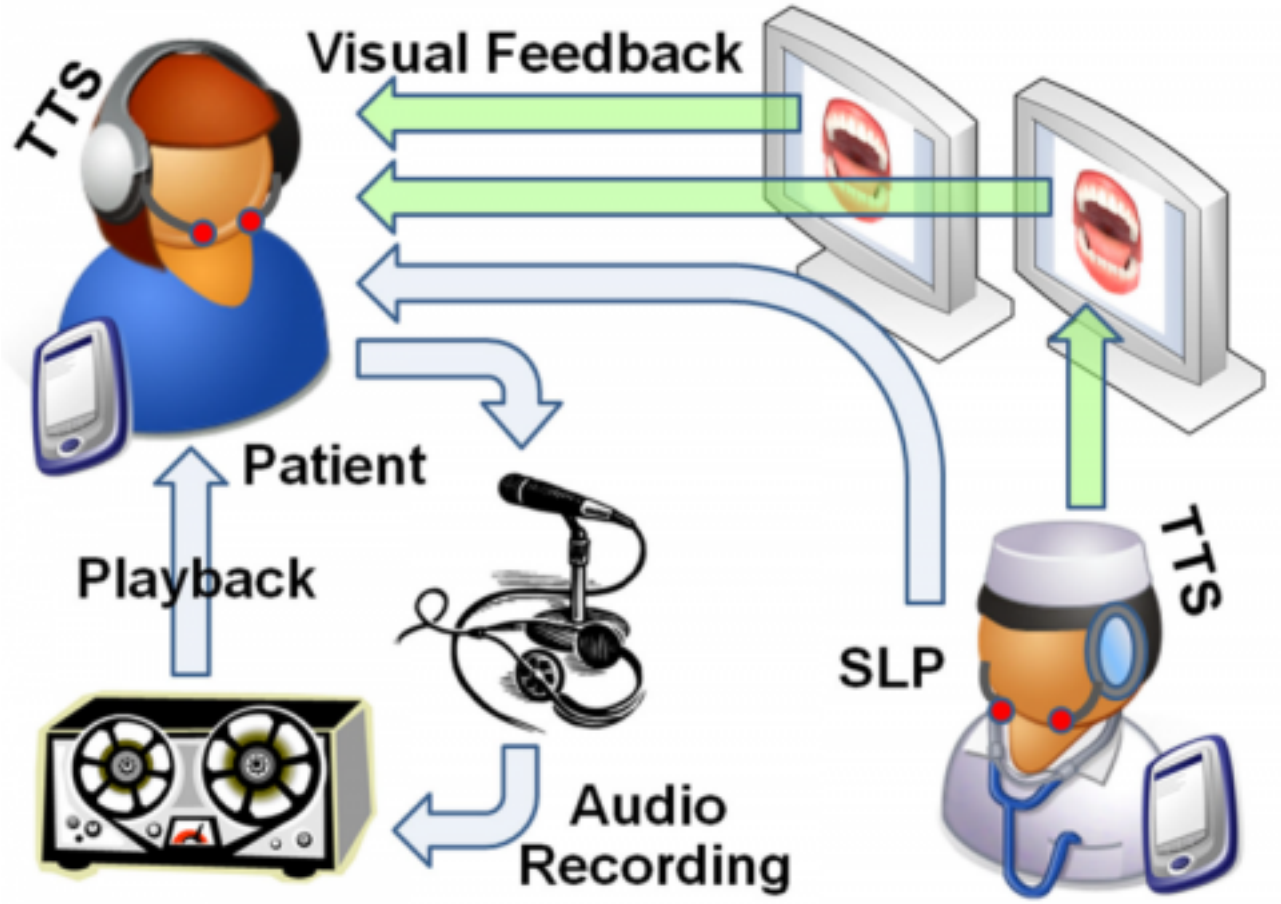
More Information

U.S. Application Filed - 20140342324A1

Publications

For more information about this technology, please visit:
https://licensing.research.gatech.edu/technology/tongue-tracking-system-tts-speech-impairment-diagnosis-and-therapy

Images: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