

A novel approach to stuttered speech correction./ Alim Sabur Ajibola, Nahrul Khair binAlang Md. Rashid, Wahyu Sediono, and Nik Nur Wahidah Nik Hashim

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Abstrak

Stuttered speech is a dysfluency rich speech, more prevalent in males than females. It has been associated with insufficient air pressure or poor articulation, even though the root causes are more complex. The primary features include prolonged speech and repetitive speech, while some of its secondary features include, anxiety, fear, and shame. This study used LPC analysis and synthesis algorithms to reconstruct the stuttered speech. The results were evaluated using cepstral distance, Itakura-Saito distance, mean square error, and likelihood ratio. These measures implied perfect speech reconstruction quality. ASR was used for further testing, and the results showed that all the reconstructed speech samples were perfectly recognized while only three samples of the original speech were perfectly recognized.

Shuttered speech adalah speech yang kaya dysfluency, lebih banyak terjadi pada laki-laki daripada perempuan. Ini terkait dengan tekanan udara yang tidak cukup atau artikulasi yang buruk, meskipun akar penyebabnya lebih kompleks. Fitur utama termasuk speech yang berkepanjangan dan berulang-ulang, sementara beberapa fitur sekunder meliputi, kecemasan, ketakutan, dan rasa malu. Penelitian ini menggunakan LPC analysis dan synthesis algoritma untuk merekonstruksi stuttered speech. Hasil dievaluasi menggunakan jarak cepstral, jarak Itakura-Saito, mean square error, dan rasio likelihood. Langkah-langkah ini terkandung kualitas speech reconstruction yang sempurna. ASR digunakan untuk pengujian lebih lanjut, dan hasilnya menunjukkan bahwa semua sampel speech yang terekonstruksi dikenali dengan sempurna sementara hanya tiga sampel dari speech asli dikenali dengan sempurna.