

NOTE FROM RESEARCH

"Medical and psychiatric diagnosis will be more accurate with large amounts of biological and psychological data, including speech features"

Need tools for assessing the medical condition

acoustic pattern recognitions are usually used for medical diagnosis

COMPANY

Canary Speech:

technology: automatic speech recognition, natural language processing techniques, Machine Learning

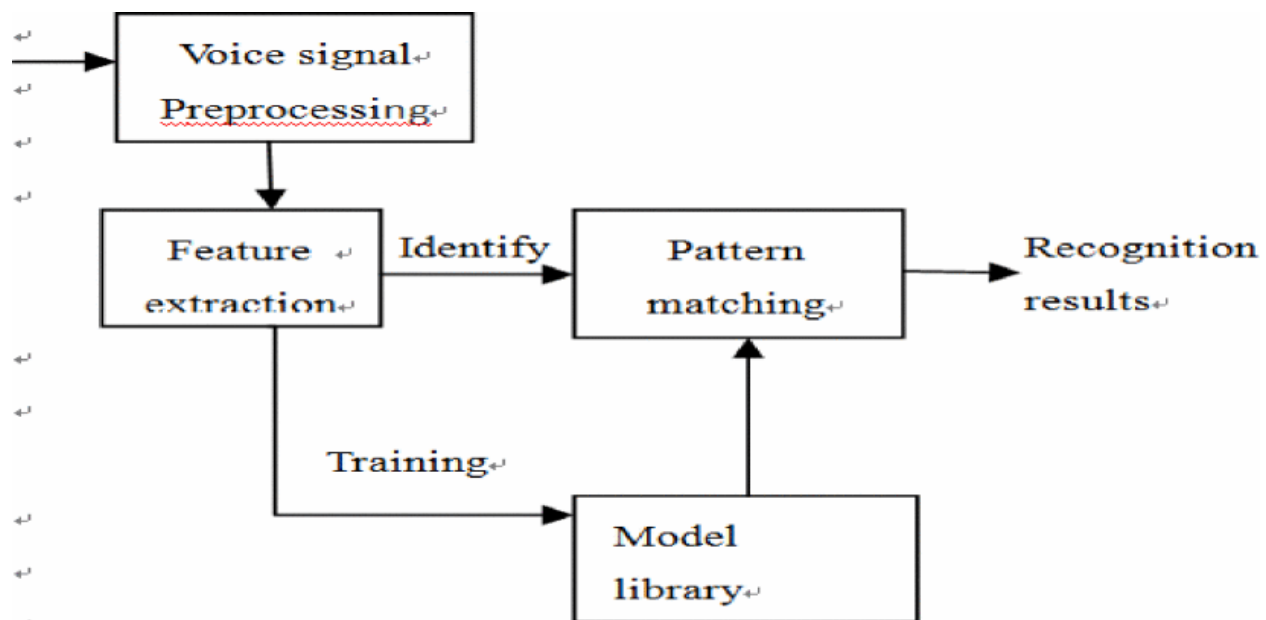
target medical condition: Depression, Stress, Anxiety, Tiredness, Concussion, PTSD, Alzheimer's, Parkinson's, Migraine, quality of life

BOOK

discrete-time speech signal processing principles and practice
contain methods for speech detection

PAPERS

- Cummins, Nicholas, et al. "A review of depression and suicide risk assessment using speech analysis." Speech Communication 71 (2015): 10-49.
 - for depression and suicide topic
- Kinnunen, Tomi, and Haizhou Li. "An overview of text-independent speaker recognition: From features to supervectors." Speech communication 52.1 (2010): 12-40.
 - general overview for many algorithm
- Meng, Jianliang, Junwei Zhang, and Haoquan Zhao. "Overview of the speech recognition technology." 2012 fourth international conference on computational and information sciences. IEEE, 2012.
 - Basic principles and methods of speech recognition technology



- speech recognition methods
 - dynamic time warping (DTW)
 - hidden Markov model (HMM)
 - vector quantization (VQ)
 - artificial neural network (ANN)
 - support vector machine (SVM)
- Gerven, Stefaan Van, and Fei Xie. "A comparative study of speech detection methods." *Fifth European Conference on Speech Communication and Technology*. 1997.
- C. E. Martinez and H. L. Rufiner, "Acoustic analysis of speech for detection of laryngeal pathologies," Proceedings of the 22nd Annual International Conference of the IEEE Engineering in Medicine and Biology Society (Cat. No.00CH37143), 2000, pp. 2369-2372 vol.3, doi: 10.1109/IEMBS.2000.900621.

ARTICAL

<https://jonathan-hui.medium.com/speech-recognition-phonetics-d761ea1710c0>

OPEN SOURCE

<https://cmusphinx.github.io/wiki/tutorial/>

https://github.com/Uberi/speech_recognition

Interesting topic for Speech detection

<https://hackaday.com/tag/echolocation/>

human echolocation arduino

The Operating Room

The Recovery Room

Surveys, Feedback, and Clinical Trials

Home and ElderCare

Moore, Meredith. "Speech Recognition for Individuals with Voice Disorders." *Multimedia for Accessible Human-Computer Interfaces*. Springer, Cham, 2021. 115-144.