

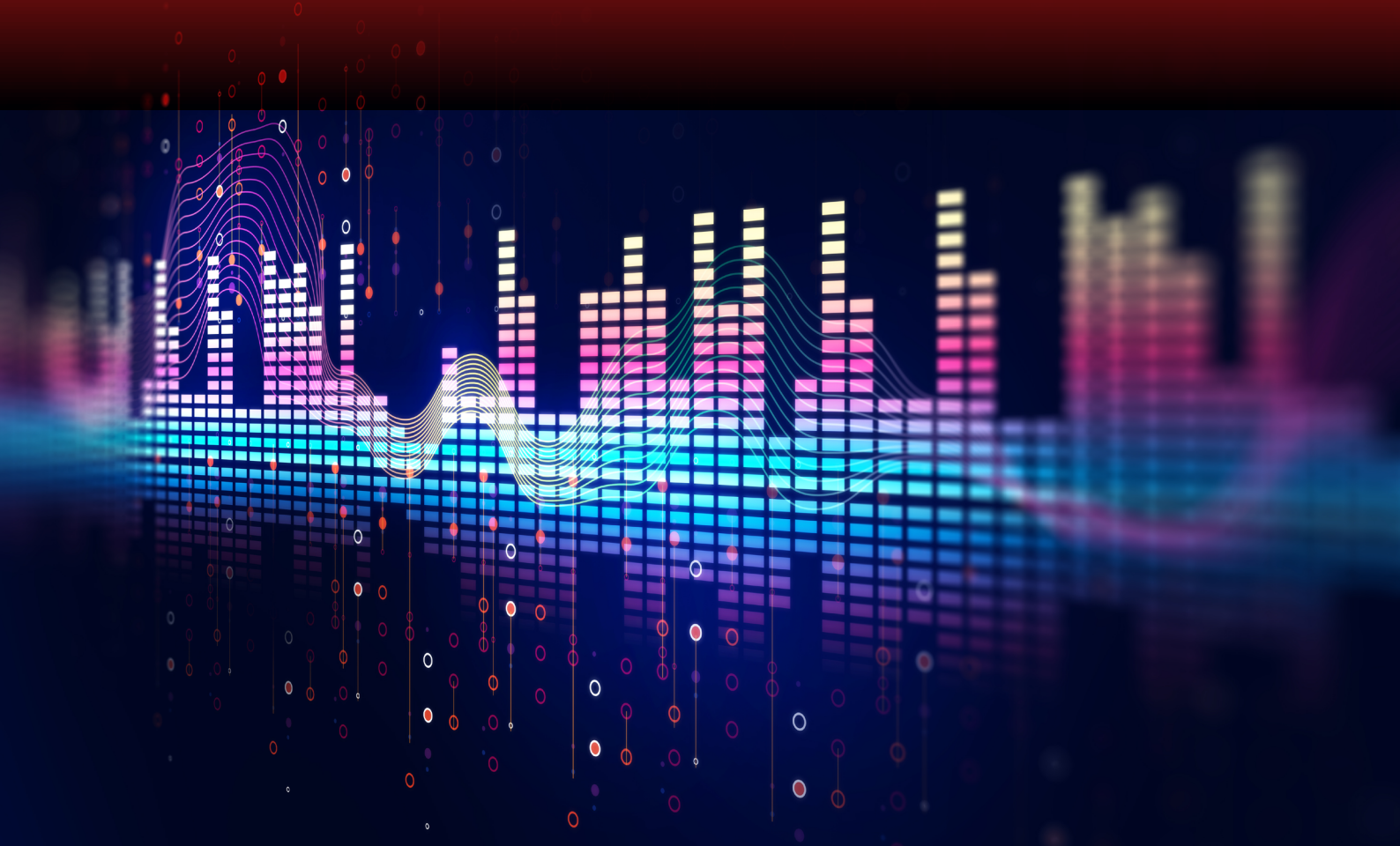
# 92 % ACCURACY

## Using voice as a biomarker for Parkinson's disease

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### CASE STUDY

Customer: Emteq  
Country: Germany  
Product: devAlce

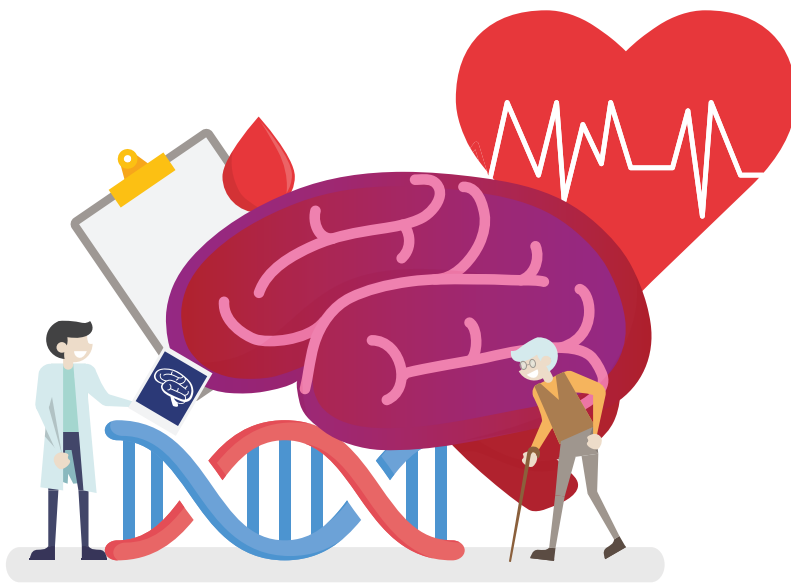


# CHALLENGE

Quickly finding the correct treatment for people with Parkinson's disease can make a dramatic improvement to their quality of life and help them to manage their condition. A change in the way a person with Parkinson's disease speaks is an early symptom, typically occurring before the more obvious symptoms relating to movement.

Therefore, early diagnosis is very important as the German Society for Neurology states. Creating a solution to monitor speech and other biometrics over time will enable both the personalisation of treatment and remote monitoring of the patient.

Emteq develops emotion sensing hardware, including smart glasses to detect facial expressions and movement. Emteq partnered with audEERING to include their audio intelligence technology in the solution, to detect the typical changes in speech associated with Parkinson's disease.



# SOLUTION

audEERING analyzed speech recorded from 30 healthy people and 20 people clinically diagnosed with Parkinson's disease. A data collection protocol was used to record the speech using a microphone embedded within the frame of a prototype pair of smart glasses. The detection of the speech biomarkers works automatically from the audio signal. Furthermore, standard microphones were used - no lab environment needed.

*Emteq develops emotion sensing hardware, including smart glasses to detect facial expressions and movement.*



The participants of the project were asked to perform three different tasks:

- Recording a free speech excerpt different for each person.
- Reading a specified passage, identical for all participants.
- Speaking a series of sounds, split into two categories: a sustained vowel sound like "aaah" and a sequence of plosive sounds like "pa-ta-ka".

*Our technology identifies a patient with Parkinson's with 92 % accuracy.*

## RESULTS

audEERING and emteq were able to identify a patient with Parkinson's with 92 percent accuracy. The smart glasses by emteq which feature the audEERING technology will be subject to clinical trial during 2019 and available in 2020.

PA-  
TA-  
KA!



### **KPIs Parkinson's detection**

- 92 % accuracy, if a patient has the disease or not.
- Smart glasses are subject to clinical trial in 2019 and will be available in 2020.



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**“ By adding vocal biomarker analysis to our emotion AI platform, this collaboration will provide significant value to our drive to monitor key symptom levels in Parkinson’s disease. Voice analysis provides important information on physical and emotional wellbeing and audEERING are leaders in this field. ”**

Graeme Cox | CEO, emteq

**audEERING GmbH**  
Friedrichshafener Straße 1  
82205 Gilching  
[www.audeering.com](http://www.audeering.com)



**Contact us!**  
[sales@audering.com](mailto:sales@audering.com)