**Snore Detection using deep neural networks**

**Team members**

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**Goals and Objectives:**

* **Motivation :**Snoring, a form of sleep-disordered breathing, interferes with sleep quality and quantity, both for the person who snores and often for the person who sleeps with the snorer. Poor sleep caused by snoring can create significant physical, mental, and economic problems.
* **Significance :** We introduce a snore detection algorithm based on the combination of a convolutional neural network (CNN) and a recurrent neural network (RNN). Here we are obtaining audio recordings of subjects referred to a clinical center for a sleep study.
* **Objectives :** The goal of this study is to look into a way for analyzing snore sounds in order to detect the existence of various difficulties that a person may be experiencing. It could be harmless, but it could also be a sign of obstructive sleep apnea (OSA), a common sleep problem. Snoring detection that is accurate may aid in the screening and diagnosis of OSA.
* **Features :**The CNN will be used to extract features from the sound spectrogram, while the RNN was used to process the sequential CNN output and to classify the audio events to snore and non-snore events. We also addressed the impact of microphone placement on the performance of the algorithm.

**References:**

* https://www.sciencedirect.com/science/article/pii/S0169260720317508
* https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0084139#:~:text=The%20snore%20detection%20algorithm%20is%20based%20on%20three,trained%20using%20thousands%20of%20snore%20and%20non-snore%20events.