Turn your dreams into music

September 10 2012

Computer scientists in Finland have developed a method that automatically composes music out of sleep measurements. The composition service works live on the Web at sleepmusicalization.net.

Developed under Hannu Toivonen, Professor of Computer Science at the University of Helsinki, Finland, the software automatically composes synthetic music using data related to a person's own sleep as input.

The composition program is the work of Aurora Tulilaulu, a student of Professor Toivonen.

"The software composes a unique piece based on the stages of sleep, movement, heart rate and breathing. It compresses a night's sleep into a couple of minutes," she describes.

"We are developing a novel way of illustrating, or in fact experiencing, data. Music can, for example, arouse a variety of feelings to describe the properties of the data. Sleep analysis is a natural first application," Hannu Toivonen justifies the choice of the research topic.

The project utilises a sensitive force sensor placed under the mattress.

"Heartbeats and respiratory rhythm are extracted from the sensor's measurement signal, and the stages of sleep are deducted from them," says Joonas Paalasmaa, a postgraduate student in the Department of Computer Science. He designed the sleep stage software at Beddit, a company that provides services in the field.

The composition service is available online at http://sleepmusicalization.net/. The users of Beddit's service can have music composed from their own sleep, while others can listen to the compositions. The online service is the work of the fourth research team member, Mikko Waris.

The study Sleep Musicalization: Automatic Music Composition from Sleep Measurements will be presented at the International Symposium on Intelligent Data Analysis in Helsinki in October 2012. IDA symposiums are well-known for presenting multidisciplinary research without prejudice.

Provided by University of Helsinki