Considering today’s lifestyle, people just sleep forgetting the benefits sleep provides to the human body. Smart-Yoga Pillow (SaYoPillow) is proposed to help in understanding the relationship between stress and sleep and to fully materialize the idea of “Smart-Sleeping” by proposing an edge device. An edge processor with a model analyzing the physiological changes that occur during sleep along with the sleeping habits is proposed. Based on these changes during sleep, stress prediction for the following day is proposed. The secure transfer of the analyzed stress data along with the average physiological changes to the IoT cloud for storage is implemented. A secure transfer of any data from the cloud to any third-party applications is also proposed. A user interface is provided allowing the user to control the data accessibility and visibility. SaYoPillow is novel, with security features as well as consideration of sleeping habits for stress reduction, with an accuracy of up to 96%.

In SayoPillow.csv, you will see the relationship between the parameters- snoring range of the user, respiration rate, body temperature, limb movement rate, blood oxygen levels, eye movement, number of hours of sleep, heart rate and Stress Levels (0- low/normal, 1 – medium low, 2- medium, 3-medium high, 4 -high)

If you are using this dataset or found any of this information contributing towards your research, please cite:

1. L. Rachakonda, A. K. Bapatla, S. P. Mohanty, and E. Kougianos, “SaYoPillow: Blockchain-Integrated Privacy-Assured IoMT Framework for Stress Management Considering Sleeping Habits”, IEEE Transactions on Consumer Electronics (TCE), Vol. 67, No. 1, Feb 2021, pp. 20-29.
2. L. Rachakonda, S. P. Mohanty, E. Kougianos, K. Karunakaran, and M. Ganapathiraju, “Smart-Pillow: An IoT based Device for Stress Detection Considering Sleeping Habits”, in Proceedings of the 4th IEEE International Symposium on Smart Electronic Systems (iSES), 2018, pp. 161--166.