

A Machine Learning Approach to Predict Insomnia

A Project Report submitted in partial fulfilment of the requirements for the
award of the Degree of Master of Computer Applications - MCA

Submitted by

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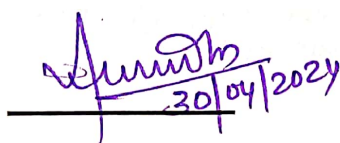
April 2024



CERTIFICATE

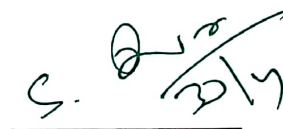
This is to certify that the Minor project work entitled “A Machine Learning Approach to Predict Insomnia” submitted to the School of Computer Science and Applications, REVA University in partial fulfilment of the requirements for the award of the Degree of **Master of Computer Applications** in the academic year 2023-2024 is a record of the original work done by **A. Ayyappa swami (R22DE004)** and **G. Vamsi krishna (R22DE043)** under my supervision and guidance. The project report has been approved as it satisfies the academic requirements in respect of Semester III Project work prescribed for the said Degree and this Minor project work has not formed the basis for the award of any Degree / Diploma / Associate ship / Fellowship or similar title to any candidate of any University.

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Dr. Ambili PS
Internal Guide

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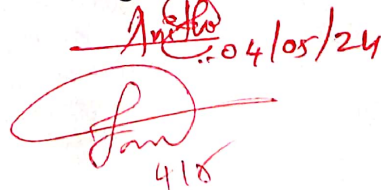


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DECLARATION

We, A. Ayyappa swami (R22DE004) and G. Vamsi krishna (R22DE043) third semester students of Master of Computer Applications belonging to School of Computer Science and Applications, REVA University, declare that this Project work entitled “A Machine Learning Approach to Predict Insomnia” is the result of the Project work done by us under the supervision of Dr. Ambili PS (Associate Professor).

We are submitting this Project work in partial fulfilment of the requirements for the award of the degree of Master of Science in Data Science by REVA University, Bangalore during the academic year 2023-24.

We further declare that this Project report or any part of it has not been submitted for the award of any other Degree / Diploma of this University or any other University / Institution.

Signed on: G. Vamsi Krishna, A. Ayyappa Swami
30/4/2024, 30/4/2024,

Certified that this project work submitted by A. Ayyappa swami (R22DE004) and G. Vamsi krishna (R22DE043) has been carried out under my guidance and the declaration made by the candidates is true to the best of my knowledge.

Signature of the Guide

Date: 30/04/2024

Signature of the Director of School

Date:

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Official Seal of the School

ACKNOWLEDGEMENT

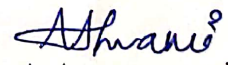
We hereby acknowledge all those, under whose support and encouragement, we have been able to complete these academic commitments successfully. In this regard, we take this opportunity to express our deep sense of gratitude and sincere thanks to School of Computer Science and Applications which has always been a tremendous source of guidance.

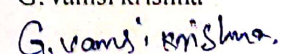
We express our sincere gratitude to **Dr. P. SHYAMA RAJU**, Honourable Chancellor, REVA University, Bengaluru for providing us the state-of-the-art facilities.

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G. Vamsi krishna


ABSTRACT

The world is changed extremely over the last decade by the power of technology. Consequently, human lives are undergoing multiple changes that have both positive and negative effects on human health. A lot of virtual involvements, lack of physical activity and extreme use of radio-wave devices are leading people into various health-related issues and Insomnia is one of them. The disorder is also known as sleeplessness. This can occur independently or can occur as a result of another problem. This may turn into permanent disease and insomnia can seriously damage a human brain. However, the presence of insomnia can be detected by different medical tests according to various internal factors of sleep. But this kind of approach is not only expensive but also time consuming. Expensive tests and equipment are also not available in many developing countries. To bridge this gap we have decided to build an intelligent model based on a machine learning approach that is able to predict chronic insomnia. For acquiring best results 6 different machine learning classifiers Random Forest, Decision Tree, Naïve Baye's, linear regression, SVM, XG Boost were used. From that 6 different models Random Forest give the best accuracy results.

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