

# SVM Classification Technique to Analyze Mental Health and Stress Levels

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**Abstract:** *Stress has become a serious problem in this current generation and the number of people affected by mental disorders is increasing day by day. However, some of them manage to acknowledge that they are facing depression while some of them do not know it. On the other hand, the vast progress of social media is becoming their “diary” to share their state of mind. Several kinds of research had been conducted to detect stress levels among various classes of people, but people normally shun this topic in shame and do not classify this problem as a disease to be treated. This Project based on analysis of mental health and aims to predict stress levels using visual inputs of the user, especially images and live camera and gives instant predictions about their mental state, i.e., happy, sad, disgusting, bored, worry, neutral, surprised. SVM model is used for feature extraction and classification into class labels. On visual inputs CNN is works best in comparison to other algorithms. Depression percentage is also shown giving exact measurements about a person's mental health.*

**Keywords:** Preprocessing, Feature Extraction, Segmentation, etc.

## REFERENCES

- [1] Support Vector Machine Accuracy Improvement with Classification. Lalit Mohan Gehu, Bhimtal, Uttarakhand, Janmejy Pant Gehu, Bhimtal, Uttarakhand, Priyanka Suyal MIET Haldwani, Uttarakhand, Arvind Kumar Uttarakhand Technical University, Dehradun (12<sup>th</sup> International Conference on Computational Intelligence and Communication Networks).
- [2] A Machine Learning Implementation for Mental Health Care, Application: Smart Watch for Depression Detection: Piyush Kumar com, Dr. Achyut Shankar, Rishi Chauhan, Dr. Sanjeev Thakur, Dr. Thompson Stephan. (2021 11<sup>th</sup> International Conference on Cloud Computing, Data Science & Engineering (Confluence 2021)).
- [3] A Depression Recognition Method for College Students Using Deep Integrated Support Vector Algorithm. Corresponding author: Xuemei Chen (Received March 31, 2020, accepted April 9, 2020, date of publication April 13, 2020, date of current version May 5, 2020.).
- [4] A Decision Tree Optimised SVM Model for Stress Detection using Bio signals, Alana Paul Cruz, Aravind Pradeep, Kavali Riya Sivasankar and Krishnaveni K.S, International Conference on Communication and Signal Processing, July 28 - 30, 2020, India.
- [5] Development of a Mental Disorder Screening System Using Support Vector Machine for Classification of Heart Rate Variability Measured from Single-lead Electrocardiography Authors: Mai Kobayashi, Takemi Matsui, Guanghao Sun, Tetsuo Kirimoto, Toshikazu Shinba.
- [6] EARLY DETECTION OF DEPRESSION FROM SOCIAL MEDIA DATA USING MACHINE LEARNING ALGORITHMS G. Geetha, G. Saranya, Dr. K. Chakrapani, Dr. J. Godwin Ponsam, M. Safa, Dr. S. Karpagaselvi (2020 2<sup>nd</sup> International Conference on Power, Energy, Control and Transmission Systems).

- [7] Detection of Mental Illness Risk on Social Media through Multi-level SVMs Kimia Hemmatirad , Hojjat Bagherzadeh, Ehsan Fazl-Ersi, Abedin Vahedian. (2020 8th Iranian Joint Congress on Fuzzy and intelligent Systems (CFIS), September 2-4, 2020, Mashhad, Iran).
- [8] Shen, G., Jia, J., Nie, L., Feng, F., Zhang, C., Hu, T., Chua, T.-S., & Zhu, W. Depression detection via harvesting social media: A multimodal dictionary learning solution in IJCAI 3838-3844 (2017).
- [9] Vitriol, V.; Cancino, A.; Weil, K.; Salgado, C.; Asenjo, M.A.; Potthoff, S. Depression and psychological trauma: An overview integrating current research and specific evidence of studies in the treatment of depression in public mental health services in chile. *Depress. Res. Treat.* 2014, 2014, 608671.
- [10] Arora, Priyanka, and Parul Arora. "Mining twitter data for depression detection." 2019 International Conference on Signal Processing and Communication (ICSC). IEEE, 2019.