

Depression Intensity Estimation via Social Media: A Deep Learning Approach

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Abstract: *Stress and depression are two of the most common and incapacitating mental illnesses that have a significant impact on society. Automatic health monitoring systems might be needed to improve the diagnosis of stress and depression via social networking. Sentiment analysis is the practice of finding feelings or views by using content mining and natural language processing tools. full of feeling Computing is the study and creation of apparatus and devices that can identify, comprehend, process, and mimic the effects of people. Effective algorithms and frameworks for a target evaluation and surveillance of mental disorders, particularly depression and stress, could be provided by deep learning and sentiment analysis approaches. The application of sentiment analysis and deep learning methods for stress identification and monitoring is covered in this study. This study examines how to identify and keep track of stress and depression using deep learning and sentiment analysis techniques. Furthermore, a fundamental framework for a multimodal framework that incorporates estimation investigation and in-depth techniques for feeling processing is provided. Using this approach, stress and sadness will be evaluated. The paper outlines the core issues and contrasts them with the framework's design.*

Keywords: Deep learning

REFERENCES

- [1] F. Hao, G. Pang, Y. Wu, Z. Pi, L. Xia, and G. Min, "Providing appropriate social support to prevention of depression for highly anxious sufferers," *IEEE Trans. Comput. Social Syst.*, vol. 6, no. 5, pp. 879–887, Oct. 2019.
- [2] S. Pappa, V. Ntella, T. Giannakas, V. G. Giannakoulis, E. Papoutsis, and P. Katsaounou, "Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis," *Brain, Behav., Immunity*, vol. 88, pp. 901–907, Aug. 2020.
- [3] T. Anwar, K. Liao, A. Goyal, T. Sellis, A. S. M. Kayes, and H. Shen, "Inferring location types with geo-social-temporal pattern mining," *IEEE Access*, vol. 8, pp. 154789–154799, 2020.
- [4] G. Shen et al., "Depression detection via harvesting social media: A multimodal dictionary learning solution," in *Proc. 27th Int. Joint Conf. Artif. Intell.*, Aug. 2017, pp. 3838–3844.
- [5] T. Shen et al., "Cross-domain depression detection via harvesting social media," in *Proc. 27th Int. Joint Conf. Artif. Intell.*, Jul. 2018, pp. 1611–1617.
- [6] F. Sadeque, D. Xu, and S. Bethard, "Measuring the latency of depression detection in social media," in *Proc. 11th ACM Int. Conf. Web Search Data Mining*, Feb. 2018, pp. 495–503.
- [7] M. Trozsek, S. Koitka, and C. M. Friedrich, "Utilizing neural networks and linguistic metadata for early detection of depression indications in text sequences," *IEEE Trans. Knowl. Data Eng.*, vol. 32, no. 3, pp. 588–601, Mar. 2020.
- [8] T. Cai, J. Li, A. S. Mian, R. Li, T. Sellis, and J. X. Yu, "Targetaware holistic influence maximization in spatial social networks," *IEEE Trans. Knowl. Data Eng.*, early access, Jun. 17, 2020, doi: 10.1109/TKDE.2020.3003047.
- [9] T. Anwar, K. Liao, A. Goyal, T. Sellis, A. S. M. Kayes, and H. Shen, "Inferring location types with geo-social-temporal pattern mining," *IEEE Access*, vol. 8, pp. 154789–154799, 2020.
- [10] R. I. Shader, "COVID-19 and depression," *Clin. Therapeutics*, vol. 42, no. 6, pp. 962–963, 2020.