

**RELATIONSHIP OF SLEEP QUALITY WITH BLINK RATE IN UNIVERSITY
STUDENTS**

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.



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ABSTRACT

FATIGUE DETECTION USING BLINK RATE

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Fatigue is a common yet overlooked issue in everyday life, affecting individuals across various industries. This research explored the potential of using blink rate as a determination to fatigue among university students, while testing a MatLab-based programming detection. Integrating the use of DMAIC methodology as foundation, data is obtained through observational (video footage) and subjective (questionnaire) data, correlating physical indicators from the number of blinks within the video footage with recorded information based from the questionnaire report with the help of Spearman's correlation. Findings indicate that while blink rate can suggest possible signs of fatigue with determination of below and above average number of blinks, it should not be used as the sole determinant. Factors such as sleep patterns, daily activities and medical health may significantly influence fatigue levels and must be considered alongside the blink rate of the individual. Based on the correlation analysis that has been completed, it was discovered that blink rate across different times of the day does have positive correlation amongst one another, however sleep quality has a low correlation with the amount of blink rate that an individual experience. Moreover, the constructed programming of blink detection system has been tested and is proven to be 84% accurate.

Keywords: Fatigue, Blink Rate, MatLab, DMAIC, SPSS, Sleep Quality.

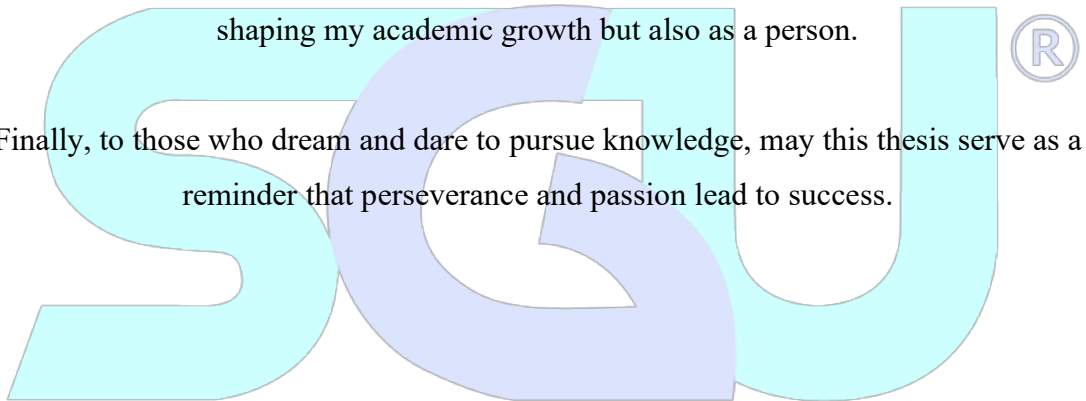


DEDICATION

I wholeheartedly dedicate this paper to my parents, whose unconditional love, sacrifice, and guidance have shaped me and helped me grow into the person I am today. Their endless support and encouragement have been my utmost strength towards this journey.

To my professors, especially my thesis advisor and co-advisor, thank you for your wisdom, patience, and inspiration. Your guidance has not only been invaluable in shaping my academic growth but also as a person.

Finally, to those who dream and dare to pursue knowledge, may this thesis serve as a reminder that perseverance and passion lead to success.



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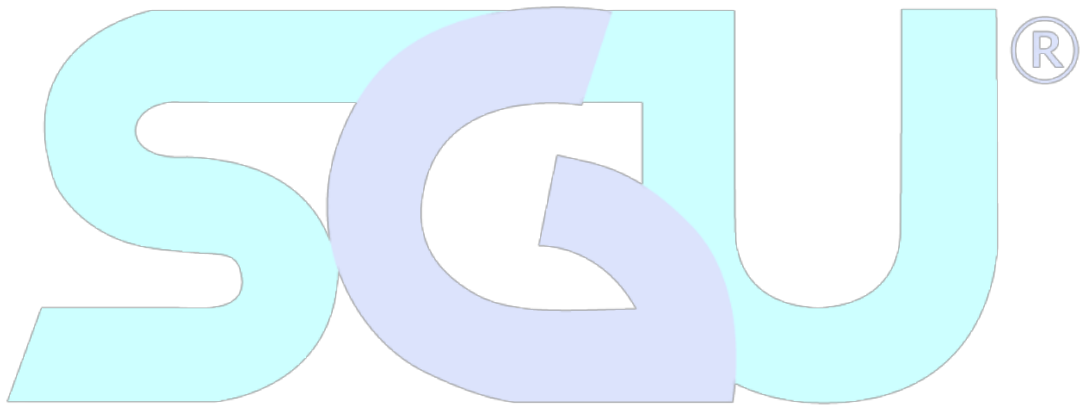


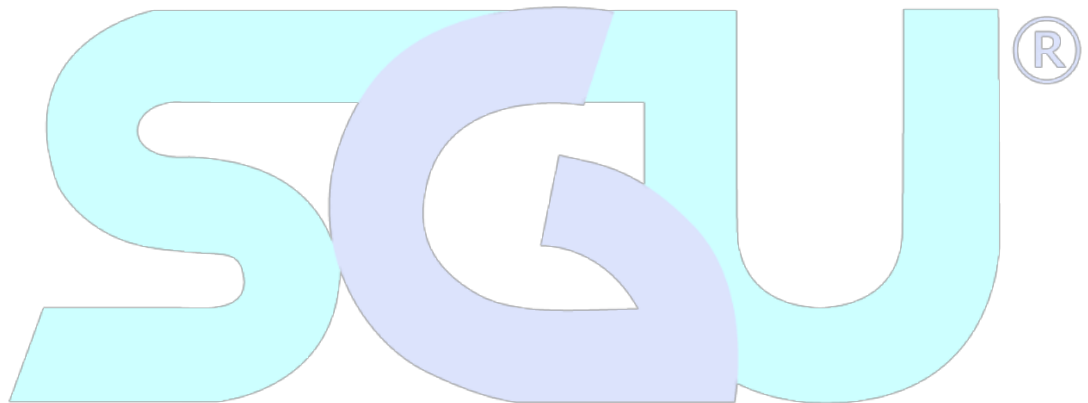
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