**Mini Project Report on**



**TITLE**



**Submitted in partial fulfilment of the requirement for the award of the degree of**

**BACHELOR OF TECHNOLOGY**

**IN**

**COMPUTER SCIENCE & ENGINEERING**

**Submitted by:**

**Student Name**  **University Roll No.**

***Under the Mentorship of***

**Mentor Name**

**Designation**



**Department of Computer Science and Engineering**

**Graphic Era (Deemed to be University)**

**Dehradun, Uttarakhand**

**July-2023**



**CANDIDATE’S DECLARATION**

I hereby certify that the work which is being presented in the project report entitled **“Title of the project”** in partial fulfillment of the requirements for the award of the Degree of Bachelor of Technology in Computer Science and Engineeringof the Graphic Era (Deemed to be University), Dehradun shall be carried out by the under the mentorship of **Mentor Name, Designation**, Department of Computer Science and Engineering, Graphic Era (Deemed to be University), Dehradun.

Name University Roll no1

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**Chapter 1**

**Introduction**

The Signature Matching Application is a sophisticated software tool designed to mathematically assess the similarity between two signatures. Signatures are unique personal identifiers used for various purposes, including document authentication and identity verification. The application provides users with a reliable and automated approach to compare signatures, enabling accurate decision-making processes. By leveraging image processing techniques and the structural\_similarity function from the skimage.metrics package, the application offers an efficient and user-friendly solution for signature analysis.

Signatures play a critical role in legal, financial, and administrative contexts, where their accuracy and authenticity are of utmost importance. Manual comparison of signatures is a labor-intensive and error-prone task, often subject to subjective interpretations. The Signature Matching Application addresses these challenges by providing an objective and quantitative evaluation of signature similarity. By leveraging advanced algorithms and image analysis methods, the application helps streamline the signature comparison process, reducing the time and effort required for accurate assessment.

The development of the Signature Matching Application aims to enhance the efficiency and reliability of signature analysis in various domains. Whether in legal proceedings, forensic investigations, or identity verification processes, the application offers an automated and standardized approach to signature comparison. By eliminating manual errors and providing an objective measure of similarity, the application has the potential to revolutionize the way signatures are evaluated, ensuring improved accuracy and integrity in critical decision-making processes.

**Problem Statement:**

The manual comparison of signatures for similarity poses several challenges and limitations. Firstly, human judgment alone may introduce subjectivity and inconsistency, leading to potential errors in assessing signature resemblance. Secondly, the process is time-consuming, especially when dealing with large volumes of signatures. Additionally, variations in lighting conditions, image quality, and individual writing styles further complicate the comparison task. Therefore, there is a need for an automated system that can accurately and objectively analyze signatures, providing a standardized approach to signature comparison and ensuring reliable results.

Objectives:

Develop a user-friendly interface that allows users to capture or upload two signature images for comparison.

Implement advanced image processing techniques and the structural\_similarity function from the skimage.metrics package to calculate the similarity between the signatures.

Through these objectives, the Signature Matching Application aims to provide users with a reliable and automated tool for signature analysis. By leveraging image processing algorithms and the structural\_similarity function, the application ensures accurate and standardized evaluation of signature resemblance, contributing to enhanced efficiency, accuracy, and reliability in various fields requiring signature verification.

**Chapter 2**

**Literature Survey**

**(2 to 3 pages)**

In this chapter some of the major existing work in these areas has been reviewed.

**Chapter 3**

**Methodology**

Explain your methodology using phrases, flowcharts, detailed diagrams, etc.

**(2 to 3 pages)**

**Chapter 4**

**Result and Discussion**

This section will contain all your results from the above methodology used.

The result could be graphs, diagrams, tables, matrices, etc.

**Chapter 5**

**Conclusion and Future Work**

This section will contain conclusion of your work. Further contains vision and ideas about future methods or new solution to your current problem statement.

**References**

[1] N. K. Kanhere and S. T. Birchfied, “Real-time incremental segmentation and tracking of vehicles at low camera angles using stable features,” *IEEE Trans. Intell. Transp. Syst*., vol. 9, no. 1, pp.148-160, March 2008 **(Example : Journal papers)**

[2] K. Onoguchi, “Moving object detection using a cross correlation between a short accumulated histogram and a long accumulated histogram”, Proc. 18th Int. Conf. on Pattern Recognition, Hong Kong, August 20 - 24, 2006, vol. 4, pp. 896 – 899 **(Example : Conference papers)**

[3] T. H. Cormen, C. E. Leiserson, R. L. Rivest and C. Stein, “Introduction to Algorithms”, 2nd ed., The MIT Press, McGraw-Hill Book Company, 2001 **(Example : Text Book/ Magazine)**

[4]Open Source Computer Vision (OpanCV) [Online]. Accessed on 21st April 2022: <http://opencv.willowgarage.com/wiki/> **(Example : Website)**