DISSERTATION

ON

**RANK LEVEL FUSION**

*A Thesis submitted in Rank Level fusion*

*for the Degree of*

Bachelor of Technology In

**Computer Science and Technology**

stream of

**Information Technology**

**Sayan Pandey**

15/ IT/21

*Under the Supervision of*

**Dr. Dakshina Ranjan Kisku**



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**Certificate of Recommendation**

This is to certify that **Sayan Pandey** has completed the dissertation entitled **“Rank Level Fusion”** under the supervision and guidance of **Dr. Dakshina Ranjan Kisku**, National Institute of Technology, Durgapur. We are satisfied with his work, which is being presented for partial fulfillment of the degree of **Bachelor of Technology in Computer Science and Engineering**, National Institute of Technology Durgapur.

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**Certificate of Approval**

The foregoing thesis is hereby approved as a creditable study of B.Tech in Computer Science and Engineering an presented in a manner satisfactory to warrant its acceptance as a prerequisite to the degree for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or any statement made, opinion expressed or conclusion therein but approve this thesis only for purpose for which it is submitted.

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**Declaration of Originality and Compliance of Academic Ethics**

We hereby declare that this thesis contains literature survey and original research work by the undersigned candidate, as a part of his Bachelor of Technology in Computer Science and Engineering. All information in this document has been obtained and presented in accordance with academic rules and ethical conduct, we have fully cited and referenced all material and results that are not original to this work.

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**Rank Level Fusion**

**ABSTRACT**

**Biometrics** is the technical term for body measurements and calculations.

However, in modern day we have digital platform to propose the biometric calculations to a greater extent. Today we use biometrics to identify and classify human beings. **Finger prints, facial recognition, retina and iris identification** etc. have now become a part and parcel of everyone’s life.

**Biometric Match** is the name given to the decision that a biometric sample and a reference template stored in a biometric database comes from the same human source, based on their high level of similarity. The device that performs this match is called **Biometric Matcher**. There is an innate ability of this matchers to provide dissimilarity scores based on comparisons made between samples; the lower the score the higher the match.

The technology is fascinating. But as a greater number of biometric matchers and a greater number of samples the more is the complexity to determine an individual’s identity. Since matchers may not have a universal rules and units to generate and assign scores respectively, a person’s identity based on scores from different matchers can be confusing to determine and we may end up mismatching someone’s biometric match with other.

**Rank Level Fusion** here comes in handy. Every subject is given a unique rank based on the matching scores generated by a particular matcher. Lower the score lower the rank. Rank Level Fusion works on the ranks generated based on matching scores. With efficient Rank Level Fusion Algorithms, a **consolidated fused rank table** is generated which is finally used for identification.

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**Chapter 1**

**Introduction**

Our world is progressing