


West Bengal State Science & Technology Congress, 2024-25


Application Form

Application Number : WBSSTC/2024-25/R4/EST/054649


Application Date : 16-10-2024



A. Personal Information

1. Full Name of the Presenting Author :	Shilpa Kapas	2. Father's Full Name :	Late Sukumar Kapas
3. Date of Birth :	21-12-1996	4. Gender :	Female
5. Nationality :	INDIAN	6. Admit Card:	

B. Permanent Address

1. State :	West Bengal	2. District :	Paschim Medinipur
3. City/Town/ Village :	Rabidaspur Purba Para	4. KMC Ward No. :	
5. House No. & Street Name :	Rabidaspur	6. PIN :	721641
7. Address Proof :			


C. Present Address

1. State :	West Bengal	2. District :	Paschim Medinipur
3. City/Town/ Village :	Rabidaspur Purba Para	4. KMC Ward No. :	
5. House No. & Street Name :	Rabidaspur	6. PIN :	721641



D. Contact Information

1. Email-ID :	shilpakapas0@gmail.com	2. Mobile Number :	8373048176
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E. Professional Information

1. Name of the Institute/ Organization	IIT Kharagpur	2. Name of the Department /Laboratory :	Mathematics and Computing
3. Designation/ Occupation of the Presenting Author :	Ex Intern	4. State :	West Bengal
5. District :	Paschim Medinipur	6. City/Town/ Village :	Kharagpur
7. KMC Ward No. :		8. Premises or Building No/ Street Name :	Kharagpur
9. PIN :	721302	10. Proof of affiliation with the Institute	

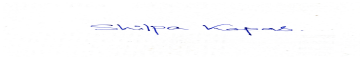
F. Abstract Details

1. Region for which applied :	Region-4- (Bankura,Jhargram,Paschim Medinipur,Purba Medinipur,Purulia)	2. Discipline :	Engineering Science and Technology
3. Title of the Abstract :	Encrypted Data Analysis Using Graph Database		
4. Name of the Co-Author/s with affiliated Institution :			
Co-Author Name :		Institution Name:	Gender:
1. Rapeti Tridev		IIT Kharagpur	Male
2. Karunamoy Maji		IIT Kharagpur	Male
Abstract File (PDF):		Abstract File (DOC):	

G. Declaration:

1. I declare that the abstract submitted is an original one and not submitted published elsewhere.
2. The content is not a plagiarized one.
3. I have not submitted this Abstract in the same or other Regional Science Congress.
4. If it is found at any stage that the information submitted by me or the declaration made by me is incorrect or false, my application will be summarily rejected.

Signature



Encrypted Data Analysis Using Graph Database

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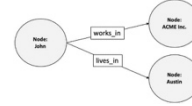
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Abstract

A cryptographic structural data paradigm designed to improve parallel and secure access to graph data. Our strategy focusses on breaking down complex social search queries into fundamental processes, carried out via adaptable protocols, guaranteeing rapid and scalable processing. To address the necessity of protecting privacy in graph query operations, we present a secure approach for inner product calculation. We subsequently enhance this strategy to meet various privacy standards under the known-background threat model. Our contribution involves creating an advanced framework that enhances efficient data retrieval while safeguarding the confidentiality of sensitive information. We aim to achieve a compromise between computational performance and privacy preservation by merging encryption techniques with parallel processing frameworks. This thesis examines the complexities of our suggested paradigm, clarifying its theoretical foundations and practical applications. We illustrate the effectiveness of our method in reducing privacy breaches while ensuring scalability and performance through thorough study and experimentation. This study makes a substantial contribution to the emerging domain of secure graph data processing, providing innovative insights and approaches for future research and development efforts.



(a) System Architecture



(b) Graph Database Model

The collaboration between in-memory and graph-based paradigms is crucial for enhancing efficiency across the data lifecycle. The rapid acquisition of information, along with the intricate depiction of relationships, enables analytics to be performed with maximum accuracy and efficiency. The integration of these two database models signifies a progressive technique, likely to enhance the realm of data management and processing substantially.