Thesis title: Identification of Encrypted Biometric Data

Thesis description:

Outsourcing biometric data to the cloud requires its encryption. Encryption makes identifying someone's biometric data from a database of encrypted biometric data a challenging process. The trivial way is to download all the encrypted data and decrypt them locally and then perform the biometric matching process. However, for a large database, the trivial solution will be impractical. Several solutions employing searchable encryption techniques have been proposed.

References

Tasks:
- Review and analyze the efficiency and security of previous proposals.
- Design a new scalable and practical solution capable of processing large databases using searchable encryption techniques.

Competence:
- Cryptography.
- Programming.
- Database.
- Algorithms and data structures.

Applications should include a brief personal letter, CV, and recent grades. In your application, make sure to give examples of previous programming or other projects that you consider relevant for the position.

Expected start time: As soon as possible

Location: SICS Swedish ICT AB, Lund

Contact persons: Dr. Mohamed Ahmed Abdelraheem (Mohamed.abdelraheem@sics.se)

About SICS
SICS Swedish ICT is a leading research institute for applied information and communication technology in Sweden. SICS is a part of Swedish ICT Research AB, a non-profit research organization owned by the Swedish government and industry. SICS' mission is to contribute to the competitive strength of Swedish industry by conducting advanced and focused research in strategic areas of computer science, and actively promote the uptake of new research ideas and results in industry and society at large. SICS is an active participant in collaborative national, European, and other international R&D programs.

SICS Security lab main research areas are Cloud Security, Security in the Internet of Things (IoT) and Secure Virtualization. The Security Lab is distributed between two locations: one part of the group sits in the main office in Kista, while the other part are pioneers in our relatively new SICS offices in Lund

SICS Swedish ICT AB, Security Lab
Ideon Science Park
Building Beta 2 3v
Scheelevägen 17
SE-223 70 Lund