Fingerprint data collection and analysis

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- Fingerprint analysis is important when interpreting evidence discovered at a crime scene.
- Recent research has suggested that fingerprint identification may not be as reliable as previously believed.
- The SURF-IT project involved several tasks. We continued an ongoing project of searching prints against a database provided by the National Institute of Standards and Technology (NIST). This project involved a database containing 27,000 mated pairs of fingerprints.
- The initial search of approximately 6,000 fingerprints took about four months. It was also necessary to conduct data analysis from this search.
- Additionally, we had to analyze a set of data containing fingerprints from nearly 600 individuals. With fingerprint matching software, we measured the computer’s ability to make correct matches by searching latent prints derived from the volunteers against this database.

**Findings**

- The donor is only on the candidate list in less than 1/3 of the cases.
- In some cases, as many as eight other candidates were selected before the actual donor was matched.
- In some of these cases the mismatched prints look nearly identical and had as many as fifteen points of identification.
- This could have catastrophic outcomes knowing that point matches above eight could easily result in a conviction during a criminal trial.