Karlsruher Institut für Technologie

Institute of Information Security and Dependability (KASTEL)
Practical IT Security
Prof. Dr. Thorsten Strufe

Brainwave Revocability Study

Projektgruppe "Praxis der Forschung"
Wintersemester 2022/23

1 Description

Verification systems are typically compromised once a human biometric, such as an iris or fingerprint, is disclosed. In comparison with these biometrics, ERP-based brain passwords(EEG) are superior since the originally stored credentials of brainwaves can be canceled if they are divulged or attacked. However, due to the lack of comprehensive research in this area, many questions remain open regarding EEG acquisition protocols; Are consumer-grade devices capable of providing revocability? Which protocol is best suited to support revocability? Do the current proposed EEG-based authentication schemes have the ability to be revoked?

2 Project Roadmap

- Review of the literature on revocability in biometrics
- Review of the literature on EEG acquisition protocols
- Design an experiment to achieve our objectives("Psychopy")
- Perform the experiment("Emotiv Epoc X")
- Analyzing data using AI

We intend to publish the results at a conference.

3 Contact

Matin Fallahi <matin.fallahi@kit.edu>