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Multimodal biometrics for robust fusion systems using logic gates

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Many professionals indicate that unimodal biometric recognition systems have many shortcomings associated with performance accuracy rates. In order to make the system design more robust, a multimodal biometric which includes fingerprint and face recognition using logical AND operators at decision-level fusion was proposed. In this presentation, the author will also discuss some concerns about the security issues regarding the identification and verification processes for the multimodal recognition system against invaders and threatening attackers. While the unimodal fingerprint and face biometric gives recognition rate of 94% and 90.8% respectively, the multi-modal approach shows a better recognition rate of 98% at the decision level fusion. Also, both the FAR and FRR have been considerably reduced, showing that the multi-modal system implemented is more robust.

Biography

Numan Celik is currently doing his PhD at Electronic Research Group at Brunel University of London on Securing Wireless Body Sensor Network with Biometrics. He is currently working with two projects on his PhD topic. The first one is to get bio-signal data from the body on a smartphone and to make a secure system with biometric traits. The second work is under EU project and responsible for visualizing hear rate and blood oxygenation data from a fingertip sensor to a remote PC via Bluetooth. He has completed his MSc thesis on multimodal biometrics using fingerprint and face recognition techniques.

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