

ABSTRACT

Komarnitskyy M.K. Research the systems of making decision in the biometrical systems authentication of person.

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The thesis is devoted research the systems of decision-making in the biometrical systems authentication of person. Analysing the existent methods of authentication, for research of the system biometrical information was select a result of dynamic introduction of signature. By the random duration of signature writing, amplitude and initial point of on-line signature input stochastic unstationary character is caused. Mathematical model as a vector of two random Gaussian processes and processing methods based on stochastic approach for the decision of person authentication task after on-line signature in the information systems are offered. Used the classes of authentication attributes as a mean and deviation for determination size of admittance limits for person in the system. Each time different biometrical information was turn out after authentication, that why was developed storage of data and admitting to the system algorithm. The mathematical model of fuzzy extractor, consisting from safe sketch and extractor, is offered. Work of fuzzy extractor based on the use of error-correcting Reed-Solomon codes and hash function SHA-256. The methods of processing biometric data allow to form a cryptographic key using fuzzy extractors. Also these methods can be used for store biometric standard. Developed software allows to proceed a person authentication based on the on-line signature.

Keywords: on-line signature, biometric authentication of person, mathematical model, stochastic Gauss process, statistical analysis, simulation, fuzzy extractor, SHA-256, secure sketch, error-correcting Reed-Solomon codes