

ANNOTATION

of the dissertation by Viktoriya Viktorovna Starkova on the topic: «UP to date opportunities of criminalistic searches linked with human identification» submitted for the degree of Doctor of Philosophy (PhD) in the specialty 8D12301 - «Law Enforcement Activities»

The dissertation work is an interdisciplinary study of topical issues related to modern possibilities of using forensic research in the field of human identification, improving operational search, investigative and expert activities. The main attention is paid to biometric technologies, genotyposcopic examination and video recording technologies in the study of elements and signs, properties and states of human appearance. Based on the research conducted, proposals have been formulated to optimize the human identification process, contributing to the theory of forensic science and, when implemented, enhancing the law enforcement practices of the Republic of Kazakhstan.

Relevance of the Research Topic. Modern global realities in everyday human life are characterized by the adoption and transition of all fields of activity to a new digital format. As a result, digital recording devices (gadgets, digital surveillance cameras, dashcams, etc.) have become widespread. There is growing scientific and practical interest in the use of biometrics, biometric identification, and data based on neural networks and artificial intelligence. Many countries actively implement biometric technologies across various spheres of life, both for citizens and within their law enforcement systems.

In today's world, biometrics is not only used in state security systems but is also increasingly applied in commercial and consumer contexts. Kazakhstan is actively supporting global trends, and our country is currently at the forefront of digitalizing all areas of activity. In his Address to the Nation, President Kassym-Jomart Tokayev emphasized that Kazakhstan must become a country that extensively applies artificial intelligence and develops digital technologies: «...We should actively integrate artificial intelligence technologies into the e-government platform, which requires a complete 'digital reboot' of the public sector...»

With the widespread introduction of digital technologies, the law enforcement agencies of Kazakhstan have adopted modern biometric technologies alongside traditional methods and techniques for identifying individuals.

Today, the concept of «biometrics» is firmly embedded in common usage. Terms such as «biometric identification,» «biometric scanners,» and «biometric passports» are widely understood. Most authors define biometric technologies as automated or semi-automated methods for identifying individuals based on their biological characteristics or manifestations. Biometrics has become the foundation of information technologies that incorporate various achievements in science, culture, and technology.

Starting January 1, 2024, mandatory fingerprint registration will be implemented in Kazakhstan as per the Law of the Republic of Kazakhstan «On Fingerprint and Genomic Registration.» This registration will occur during the issuance of identity documents, with fingerprints entered into a civil database using fingerprint scanners. Two major cities, Almaty and Astana, are implementing video analytics based on artificial intelligence, which will be integrated into street surveillance cameras.

Typically, identifying offenders is carried out as part of forensic identification of their appearance. This process occurs during pre-trial investigations by law enforcement agencies in three key areas: operational-search activities, investigative actions, and forensic examinations.

Modern capabilities for capturing a person's appearance and activities have found extensive application in video surveillance systems. These systems are increasingly used for both the personal safety of citizens and for pre-trial investigations and crime prevention by internal affairs agencies.

Kazakhtelecom's Cloud Video Surveillance Project is a key component of the modern infrastructure of Kazakhstan's cities. Over 60,000 cameras have been installed across the country. The development of a service model for interactions between internal affairs agencies and citizens envisions expanding video surveillance systems with integration into the Operational Control Centers of police departments in all regions. These surveillance systems help monitor compliance with public order and provide critical evidence in pre-trial investigations.

The active integration of surveillance cameras into law enforcement activities has contributed to crime prevention, suppression, detection, and investigation of criminal and administrative offenses. Their presence on streets and in public places serves as a significant deterrent and aids in the swift and effective identification of individuals.

According to the Committee on Legal Statistics and Special Records of the Prosecutor General's Office of Kazakhstan, 132,778 criminal offenses were registered in 2024, representing a 5.3% decrease compared to the previous year (140,272). Notably, fewer offenses were recorded in public places (a 2.4-fold decrease), and street crime declined by 4.2 times. Additionally, the clearance rate of crimes in the immediate aftermath of their occurrence improved by 10.3%.

Despite the active use of surveillance systems for monitoring public order, challenges remain in their application in Kazakhstan. A nationwide survey of investigators revealed that 9 out of 10 investigators use video or photo materials in digital format in their work. However, one in three investigators faces difficulties in using them.

Challenges arise when commissioning examinations at the Center for Forensic Examinations of the Ministry of Justice of Kazakhstan or conducting forensic research within the operational-criminalistic divisions of the Ministry of Internal Affairs. Issues are particularly evident during identifications and evaluations of evidence, as video materials often suffer from poor image quality and unsuitable filming conditions for identification purposes.

In addition to technical issues, the application of modern biometric technologies is hindered by other factors, including insufficient legal regulation, the lack of a unified approach to their use, and a lack of progress in developing biometric databases and identification conditions. Integrated surveillance systems can capture not only the initial stages of criminal acts but also the measures taken by offenders to conceal crimes and evade arrest. This raises questions about the use and documentation of such data in pre-trial investigations.

These issues highlight the need for comprehensive scientific research into human identification, taking into account the latest advancements in science and technology.

The Aim and Objectives of the Dissertation. The primary aim of the dissertation research is to determine the modern capabilities of forensic identification studies of human appearance and to develop specific recommendations for improving expert and operational-criminalistic activities.

The aim of the research defined the following **objectives**:

- to consider technologies aimed at establishing the appearance of a person and identify the most effective types of forensic research, defining their tasks, issues, subject, and object of research; propose a system for utilizing biometric technologies that creates a new identification system incorporating «machine» recognition methods and forms of identification conducted by specialists or experts;

- to explore the conceptual framework in the field under consideration, to identify shortcomings, to fill in gaps by developing author's definitions of such concepts as: "biometrics", "law enforcement biometrics", "biometric system of law enforcement", "Deepfake", to define a new form of "machine" recognition based on identification methods, to analyze the process of terminological borrowing of verification, authentication, authorization;

- to determine the directions of application of DNA technologies in establishing human identity by considering DNA phenotyping technologies in the law enforcement sphere;

- to consider video surveillance systems, taking into account the possibilities of forensic identification of an individual by appearance, to propose instructions for the use of 3D recognition technology in the creation of a centralized multimodal integrated forensic photo and video accounting;

- to develop an algorithm for specialized software for portrait studies and forensic examination of human appearance based on video images.

Scientific Novelty of the Research. The scientific novelty lies in the fact that the results of this dissertation, compared to previously published works by other authors, reveal new opportunities for processes related to human identification.

For the first time, pressing issues surrounding the use of biometrics in human identification during forensic studies of appearance using biometric technologies are addressed. The research defines not only theoretical but also practical aspects of the integrated use of human features, properties, and conditions in operational recognition and forensic examinations. A detailed approach to applying modern software for this type of research is also presented.

Object. Modern capabilities of forensic identification studies of human appearance.

Subject. Patterns of objective reality that determine the possibilities of human identification based on elements and features of appearance.

Methodological and Theoretical Foundation. The research is based on the general scientific dialectical method of cognition as a universal method for studying socio-legal phenomena. It also employs general scientific and specialized methods such as the systematic, comparative, historical, comparative-legal, logical-legal, statistical, sociological methods, as well as analysis, synthesis, and others.

The research methodology is grounded in general and specific methods of cognition within the forensic science of human appearance characteristics (e.g., comparative-legal,

concrete-sociological, logical-systemic analysis, synthesis, description, generalization, structural-functional methods, and others); analysis of statistical data; surveys and interviews with respondents; study of normative materials and theoretical sources; and international experience.

Theoretical Basis. The theoretical basis of the dissertation comprises scientific works of researchers who studied theoretical and practical issues of human identification relevant to the problem under investigation. The results address the lack of scientific elaboration on these topics in domestic science. The research was conducted in accordance with scientific methodology, allowing for evaluation within the framework of a general concept.

Empirical Basis of the Research. The empirical foundation of the research consists of statistical data from the Committee on Legal Statistics and Special Records of the Prosecutor General's Office of the Republic of Kazakhstan for the period from 2018 to 2024. The dissertation analyzes the results of surveys conducted among 487 employees of the Ministry of Internal Affairs of the Republic of Kazakhstan (investigators, inquiry officers, criminal police officers, forensic specialists) and experts from the Forensic Examination Center of the Ministry of Justice of the Republic of Kazakhstan.

The dissertation also examines data provided by experts through participation in international forums and seminars in the field of innovative directions in modern forensic science. Additionally, it incorporates materials from judicial and investigative practices (operational-forensic and expert activities), as well as state and departmental programs, orders, reports, analytical reviews, memos, and other documents related to forensic and expert activities from the Ministry of Internal Affairs and the Forensic Examination Center of the Ministry of Justice of Kazakhstan, foreign countries, and international organizations.

Theoretical and practical information obtained through participation in international forums, seminars, and conferences was utilized, along with interviews conducted with forensic specialists, experts, and law enforcement personnel from Kazakhstan, Kyrgyzstan, Uzbekistan, Russia, Belarus, China, Turkey, Israel, and South Korea. These interviews focused on the use of human appearance in identifying individuals during operational-search activities, investigative procedures, and forensic examinations involving biometric data during pre-trial investigations.

Furthermore, research work was conducted under the author's leadership for projects commissioned by the Operational-Criminalistic Department of the Ministry of Internal Affairs of Kazakhstan, including: «Identification of Individuals Based on Anatomical and Functional Features;» «Methods for Recognizing Individuals by Anatomical and Functional Features of Appearance Using Information Systems;» «Study of Genomic Polymorphism of Autosomal DNA in the Kazakh Population;» «Modern Capabilities of Portrait (Habitual) Research.» The scientific outputs of these projects (methodological guidelines, analytical reports, and training manuals) have been successfully implemented both in the educational process and in the practical activities of operational-forensic units.

Provisions Submitted for Defense:

1. It has been established that during the period of digital progress, there are prerequisites for the allocation of a separate type of forensic research in the system of branches of forensic technology — the forensic study of human appearance from video images (the study of elements and signs of human appearance from static and dynamic representations of signs, properties and states on video recording materials, to solve identification, diagnostic or classification issues).

2. The author's definitions are formulated, the implementation of which can be implemented into the current legislation (the Law of the Republic of Kazakhstan: "On fingerprint and genomic registration" Chapter 1, Article 1; "On Informatization" Section 1, Chapter 1, Article 1; "On Personal data and their protection" Chapter 1, Article 1; Order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan "On approval of the Rules for the collection, Processing and Storage of Biometric personal data for their biometric authentication in the provision of public services" Chapter 1, paragraph 1; Order of the Minister of Internal Affairs of the Republic of Kazakhstan "On certain issues of fingerprint and genomic registration" Chapter 1 point 2, as well as in the theory of science of criminology and forensic expertise):

– «Biometrics»: A system of methods aimed at analyzing biological data for the purpose of identifying, verifying, and authenticating individuals based on physiological or behavioral characteristics;

– «Law Enforcement Biometrics»: A scientific field focused on analyzing biological data to identify, verify, and authenticate individuals for solving law enforcement tasks;

– «Biometric Systems in Law Enforcement Activities»: Systems designed for collecting, processing, and storing data on the physical or behavioral characteristics of individuals for subsequent verification or authentication to address law enforcement objectives;

– «Deepfake»: A method of computer-generated synthesis of digital images (video or audio recordings) that alters the original content by overlaying new content, combining existing data, and creating a modified version using neural networks or artificial intelligence;

– "neural identification": Is an operational recognition, identification process based on a comprehensive study of a person's appearance using modern "machine" software technologies. A new form of identification based on the differentiation of the methods used: verification, authentication, authorization, criminalistic characteristics are given.

3. The analysis of the use of DNA technologies has been carried out, the positive and negative sides affecting their implementation in law enforcement activities have been identified, and the need to use DNA phenotyping technology for law enforcement purposes has been established. The revealed DNA characteristics make it possible to predict an assumed personality portrait (3D image) of a person with the ability to interact with existing databases of forensic photo and video records.

4. The creation of a centralized integrated forensic accounting using a 3D recognition model of static and dynamic elements and signs, properties and states of

registered persons on the basis of the OKD of the Ministry of Internal Affairs of the Republic of Kazakhstan, in the format of instructions, is justified.

5. An algorithm has been developed for specialized software for portrait studies and forensic examination of human appearance based on video images — from uploading an image, processing it to identify features suitable for identification, Deepfake, automatic or individual comparison, to analyzing the results and drawing conclusions.

Description of the Main Results Obtained in the Research

Result 1. Based on the analysis of the use of representations of a person's appearance, the genesis in establishing a person's identity is stated, 8 stages are identified, which are based on the emergence of new technologies for displaying a person by elements and signs of appearance. The modern stage of the study of human appearance images, characterized by the development of digital technologies and other achievements of science and technology, has allowed us to single out as an independent type of research — the forensic study of human appearance based on video images. It refers to the study of elements and features of a person's appearance based on static and dynamic representations of features, properties, and states on video recordings to address issues of identification, diagnostic, or classification significance in establishing identity.

Result 2. In the interests of developing the criminalistic doctrine of human appearance, the conceptual apparatus of the Institute of human identification has been supplemented with such categories as "biometrics" (a system of methods aimed at analyzing biological data for the purpose of identification, verification and authentication of an individual by physiological or behavioral characteristics), "law enforcement biometrics" (a scientific field aimed at analyzing biological data in for purposes of identification, verification, and authentication of an individual based on physiological or behavioral characteristics, in order to solve law enforcement problems), "biometric law enforcement systems" (systems aimed at collecting, processing, and storing data on a person's physical or behavioral characteristics in order to further verify or authenticate them in order to solve law enforcement problems), "Deepfake" (a technique for computer synthesis of digital images (video or audio recordings) in order to change the original content by superimposing a new one to combine the existing one and create an initial version, using the capabilities of neural networks or artificial intelligence), "neural identification" (operational recognition, an identification process based on a comprehensive study of a person's appearance using modern "machine" software technologies), where there is a differentiation of the methods used into: verification, authentication, authorization, criminalistic characteristics are determined. It is proposed to implement these definitions in the Laws of the Republic of Kazakhstan.: "On fingerprint and genomic registration" Chapter 1, Article 1; "On Informatization" Section 1, Chapter 1, Article 1; "On Personal Data and their protection" Chapter 1, Article 1; Order of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan "On approval of the Rules for collecting, processing and storing biometric data of individuals for their biometric authentication in the provision of public services" Chapter 1, paragraph 1; Order of the Minister of Internal Affairs of the Republic of Kazakhstan "On certain issues of fingerprint and genomic registration" Chapter 1, paragraph 2, as well as to the theory of the science of criminology and forensic expertise.

Result 3. The directions of application of DNA technologies have been developed, the positive and negative sides influencing their implementation in law enforcement activities have been identified:

- expert opinion;
- operational;
- investigative, which has two areas of research:

1) DNA of unidentified corpses and DNA of persons who are presumably his close blood relatives;

2) DNA analysis of unidentified corpses with DNA samples in the database of law enforcement agencies:

- accounting and registration;
- research.

Positive ones:

- genetic technologies, for the purpose of identifying a specific person associated with a criminal event at the moment, have no analogues;

- this technology allows the use of small amounts of genetic material or "contaminated" objects;

- the results of DNA research make it possible to solve a wide range of issues for solving law enforcement tasks.

Negative ones:

- the need to organize specialized laboratory conditions that meet specific requirements;

- relatively long-term production of genetic research;

- the economic high cost of producing genetic research due to the technical component and consumables of imported production;

- lack of dynamics in the formation of databases of genetic material;

- the dependence of laboratories on the results of genetic research carried out in countries of the far and near abroad, etc.;

- the positive tasks of video surveillance for the security of the city are identified, the typical tasks of these video surveillance systems in registering and documenting events are highlighted.

The relevance of using DNA phenotyping technology for law enforcement purposes has been determined. The revealed DNA characteristics make it possible to predict an assumed personality portrait (3D image) of a person with the ability to interact with existing databases of forensic photo and video records.

Result 4. Digitalization of all development processes in Kazakhstan could not but affect the improvement of the technical base of human identification. Conditions have been created and prerequisites have been created for the creation of a centralized integrated forensic photo and video accounting, an algorithm for its operation using a 3D model for recognizing static and dynamic elements and signs, properties and states of subjects. The video materials make it possible to expand the field of studying human appearance by examining not only the statically captured image, but also the signs of a motor character included by the expert in the identification complex. It is possible to form a system of individual dynamic features recorded on video recordings, provided that a

Special Republican centralized forensic Accounting Department of the Ministry of Internal Affairs of the Republic of Kazakhstan is created. Due to its specificity and significant amount of information, such accounting should be entrusted to the OKD of the Ministry of Internal Affairs of the Republic of Kazakhstan, as well as the Department of Internal Affairs in the field, combining them into a single information system. Such an integrated approach to solving the problem of forming forensic video records of dynamic features, properties and states using modern information systems will allow solving the tasks of law enforcement.

Result 5. Based on the conducted comprehensive research, it has been established that it is necessary to develop specialized software for conducting not only portrait research, but also research of a person's appearance from video images, providing a large number of filters and tools to improve the image, restore it, prepare illustrations, video tracking, multiplatform, use neural network capabilities, etc.

The algorithm of this program should be implemented taking into account three stages:

- 1) the uploaded image is automatically processed by the program with the final result of determining the features suitable for identification, Deepfake features;
- 2) comparison, both in automatic mode and individually selected samples;
- 3) analyzing the results of the first two stages and forming a tabular output.

Theoretical and Practical Significance. The methodological foundation of the research is based on a balanced combination of general theoretical and specialized legal research methods in forensic and expert studies.

The results and conclusions have significant theoretical and practical implications for law enforcement officers involved in crime investigation, operational-criminalistic support, and forensic examinations.

The dissertation aligns with national and international programs, including The Address of President Kassym-Jomart Tokayev: «Unity of the Nation and Systemic Reforms as a Solid Foundation for Prosperity» (Astana, September 2, 2024).

The dissertation research correlates with industry policy documents on the digitalization of government agencies, in particular: "National Development Plan of the Republic of Kazakhstan until 2029" Decree of the President of the Republic of Kazakhstan dated July 30, 2024 No. 611, the State Program "On approval of the Concept of digital Transformation, development of the information technology and cybersecurity industry for 2023-2029" Resolution Government of the Republic of Kazakhstan No. 269 dated March 28, 2023. With the Laws of the Republic of Kazakhstan "On Fingerprint and Genomic Registration" dated December 30, 2016 No. 40-VI, "On Informatization" dated 11/24/2015 No. 418 – V, "On Personal Data and their protection" dated 05/21/2013 No. 94 – V. By Orders of the Minister of Digital Development, Innovation and Aerospace Industry of the Republic of Kazakhstan "On approval of the Rules for Collecting, Processing and Storing Biometric data of individuals for their biometric authentication in the provision of public services" dated October 27, 2020 No. 406/NK, the Minister of Internal Affairs of the Republic of Kazakhstan "On certain issues of fingerprint and genomic registration" from September 30, 2024, No. 730.

Structure and Volume. The dissertation comprises an introduction, two chapters (divided into five subsections), a conclusion, a list of references, and appendices. It meets the standards set by the Committee for Quality Assurance in Education and Science of the Ministry of Science and Higher Education of the Republic of Kazakhstan.

Approval and Implementation of Research Results. The findings of the dissertation have been presented at international and national conferences, forums, and in scientific articles and a monograph. The main conclusions and proposals of the dissertation research were published in compliance with Clause 6 of the Rules for Awarding Degrees, approved by Order No. 127 of the Minister of Education and Science of the Republic of Kazakhstan dated March 31, 2011.

Key research outcomes are reflected in five scientific articles published in journals recommended by the Committee for Quality Assurance in Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan, two articles in international journals indexed in the Scopus database, ten conference materials, and one monograph.

1) Saydamarova V.V. Biometric Data Systems as the Main Method of Forensic Registration and Identification of Individuals in the Modern Era // Journal «ҒЫЛЫМ,» 2020, № 4(67), pp. 37-41.

2) Saydamarova V.V. Methodological Basis of Studying a Person's External Appearance Using Video Materials // Journal «ҒЫЛЫМ,» 2021, № 2(69), pp. 30-36.

3) Saydamarova V.V. Formation and Development Trends in Biometrics // «Bulletin» of Karaganda Academy of the Ministry of Internal Affairs of the Republic of Kazakhstan named after B. Beisenov, 2021, № 1(71), pp. 55-61.

4) Saydamarova V.V. Modern Capabilities of DNA Use in Law Enforcement for Human Identification // «Bulletin» of Karaganda Academy of the Ministry of Internal Affairs of the Republic of Kazakhstan named after B. Beisenov, 2023, № 2(80), pp. 89-97.

5) Starkova V.V. Biometrics in Law Enforcement Activities // «Bulletin» of Karaganda Academy of the Ministry of Internal Affairs of the Republic of Kazakhstan named after B. Beisenov, 2023, № 3(81), pp. 114-122.

6) Saydamarova V.V. et al. Genetic Polymorphism of 27 Y-STR Loci in West Kazakh Tribes from Kazakhstan and Karakalpakstan, Uzbekistan // Open Access Journal MDPI, Genes, 2022, 13(10), 1826. DOI: <https://doi.org/10.3390/genes13101826>.

7) Saydamarova V.V. et al. Genotype Data for 60 SNP Genetic Markers Related to Eye, Hair, and Skin Color, ABO Blood Group, Gender, and Major Y-Chromosome Haplogroups in the Kazakh Population // Open Access Journal BMC Res Notes, 2024, 17, 51. DOI: <https://doi.org/10.1186/s13104-024-06712-z>.

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the Ministry of Internal Affairs of the Republic of Kazakhstan named after B. Beisenov, Karaganda, 2019, pp. 207–211.

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11) Saydamarova V.V. Biometric Identification in Modern Forensic Science // Current Issues in Forensic and Expert Activities: Materials of the International Conference. Moscow University of the Ministry of Internal Affairs of Russia named after V.Ya. Kikotya, Moscow, 2021, pp. 386–392.

12) Saydamarova V.V. Perspectives and Capabilities of 3D Scanning for Operational Identification of Individuals // Innovative Technologies in Forensics: Collection of Materials of the International Remote Scientific and Practical Conference. Karaganda Academy of the Ministry of Internal Affairs of the Republic of Kazakhstan named after B. Beisenov, Karaganda, 2021, pp. 146–149.

13) Saydamarova V.V. A Modern Perspective on the Use of Video Materials by Law Enforcement Agencies in Pre-Trial Investigations // Forensic and Criminal Procedural Science: Current State and Development Trends. Materials of the International Scientific and Practical Conference Dedicated to the 70th Anniversary of Professor B.M. Nurgaliev. Karaganda Academy of the Ministry of Internal Affairs of the Republic of Kazakhstan named after B. Beisenov, Karaganda, 2022, pp. 240–244.

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15) Saydamarova V.V. Methodological Aspects of Identifying Individuals by Elements and Features of Human Appearance // Development of Scientific Ideas by Professor R.S. Belkin in the Context of Modern Challenges (On the Occasion of His 100th Birth Anniversary). Materials of the International Scientific and Practical Conference “63rd Forensic Readings,” Part 2, Moscow, 2022, pp. 172–180.

16) Saydamarova V.V. Methodological Approaches to Using Representations of Dynamic Elements and Features of Human Appearance for Identification // Forensic Examination: Russian and International Experience. Materials of the VI International Scientific and Practical Conference, Volgograd, 2022, Issue 6, pp. 495–502.

17) Saydamarova V.V. Trends in the Use of Biometric Technologies in Law Enforcement // The Compliance of the Forensic and Expert Field with Modern Threats and Its Development Prospects Based on Advanced Achievements. Collection of Materials from the International Scientific and Practical Conference, Academy of the Ministry of Internal Affairs of the Republic of Uzbekistan, Tashkent, 2023, pp. 105–111.

18) Saydamarova V.V. Biometrics in Forensic Examination of Human Appearance Based on Digital Images. Almaty: LLP "Lantar Books," 2023, 155

Pages Reviewers: Begaliev E.N., Aubakirova A.A., Brushkovsky K.B., A.V. Brylevsky.

The reliability of the conducted research is confirmed by the positive approbation of the materials of the dissertation research, in connection with which the acts of implementation of the results of this work were obtained:

– In the Educational Process: Karaganda Academy of the Ministry of Internal Affairs of Kazakhstan named after B. Beisenov. Kostanay Academy of the Ministry of Internal Affairs of Kazakhstan named after Sh. Kabyrbayev. Almaty Academy of the Ministry of Internal Affairs of Kazakhstan named after M. Yessbulatov.

– In Practical Activities: Operational-Criminalistic Department of the Ministry of Internal Affairs of Kazakhstan. Interregional Center for Forensic Examinations for the Southeastern Region. Development of software by LLP «IRP LAB.» Department of Informatization and Communications of the Ministry of Internal Affairs of Kazakhstan.