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THE USE OF LINGUISTIC TECHNOLOGIES IN CRIME INVESTIGATION: FOREIGN PRACTICE

In the modern context of digitalization, linguistic technologies play an increasingly important role in criminology and criminal investigation. Language data have become a powerful source of evidential information, allowing investigators to identify individuals, determine the motives of crimes, and uncover manipulative or disinformation influences in cyberspace [1].

The use of linguistic technologies in criminology involves the application of methods of computational linguistics, forensic linguistics, and textual and communication analysis. One of the key areas is automated speech analysis — the examination of audio recordings to identify a speaker by their voice. Such technologies are widely used in the USA, the United Kingdom, Canada, Germany, and Israel [3]. For example, the Federal Bureau of Investigation (FBI) employs Voice Biometrics systems to compare suspects' voiceprints with database records.

Another important field is linguistic analysis of written messages — such as emails, social media posts, threats, or anonymous notes. Foreign practice shows that the analysis of stylistic, grammatical, and lexical features of texts helps identify the author. In the United Kingdom, forensic linguists use the JStylo program to determine authorship through statistical patterns of writing.

In addition, semantic analysis and monitoring of online communications are actively developed in the EU and the USA to prevent terrorist acts and cyberattacks. Artificial intelligence algorithms enable the detection of key words, aggressive narratives, or signs of

radicalization. For instance, under the PREVENT program (United Kingdom), linguistic technologies are used for early identification of potential threats in digital environments [2].

Forensic linguistics also includes document content analysis in cases involving defamation, fraud, hate speech, or manipulation of information. In the United States, forensic linguistic experts often participate in court proceedings as consultants to determine the meaning of disputed expressions and communicative intent.

It is worth noting that while linguistic technologies increase the efficiency of investigations, they also require careful adherence to ethical and legal standards. The use of automated language analysis systems must be accompanied by guarantees of data protection, and the prevention of manipulations or false conclusions.

The positive experience of foreign countries demonstrates that integrating linguistic technologies into law enforcement practice not only improves crime detection rates but also enhances preventive measures — helping to identify threats at the early stages of their formation within the communication space [3]. Thus, linguistic technologies represent an innovative tool in criminology that combines artificial intelligence, big data analytics, and humanities-based expertise [1]. Their effective implementation in Ukraine, taking into account international experience, can significantly strengthen the potential of the national security and justice system.

References:

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