행정안전부

보 도 자 료

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First in the world to develop 'Voice Analysis Model for Voice phishing'

- **The world's first clustering algorithm for criminal organizations**
- **77% improvement in performance through Korean voice learning compared to existing overseas analysis models**

□ Criminal investigation and arrests are expected to speed up through the 'Voice analysis model for voice phishing' developed focusing on arresting phone frauds for the first time in the world.

□ The Ministry of the Interior and Safety (MOIS) announced that the 'Voice analysis model for voice phishing' that can be utilized to arrest voice phishing fraudsters would be used in the voice phishing investigation, including voice analysis from the end of this month.

□ Until now, the National Forensic Service (NFS) in Korea has used voice analysis models developed in Russia and England to conduct voice analysis necessary for voice phishing investigations.

○ However, given the characteristics of the voice analysis model learned in a foreign language, there was a limit to the accuracy of determining

the identity of a criminal using the Korean language.

○ Other than identifying a single offender's voice, the clustering algorithm for criminals involved in voice phishing was essential because the voice phishing criminal organization works in a group by playing roles (investigators, prosecutors, etc.). Still, the existing model did not have this function.

□ Accordingly, the Integrated Data Analysis Center (IDAC) under the MOIS and the NFS started last year developing a model capable of grouping those involved in the crime and improving the accuracy of identifying the speaker, focusing on arresting voice phishing criminals.

□ This model, created by applying the latest AI deep learning technology, utilized more than a million voice data of Korean and foreign languages extracted from approximately 6,000 persons at home and abroad during development.

□ In the case of the Korean language, it was possible to create the optimal algorithm for identifying voice phishing speakers by repetitively executing various learning and performance verification processes on more than 100,000 voice data of ordinary persons and voice data of voice phishing scammers owned by the NFS.

○ Following the development of the model, the accuracy verification, which was conducted twice, was performed under diversified circumstances using 660 voice data from 150 persons in the first round and 12,000 separate voice data from 200 persons in the 2nd round.

□ The performance verification confirmed that the rate of reading to identify a criminal's voice was improved by about 77%* compared to that of the existing foreign model.

*Upon analyzing 100 criminal voice data, the existing model could identify only about 28 voices. The new model is capable of identifying up to 51 voices.

□ In addition, the IDAC explained that grouping criminals*, which was not expected of the existing model, is now possible for the first time globally.

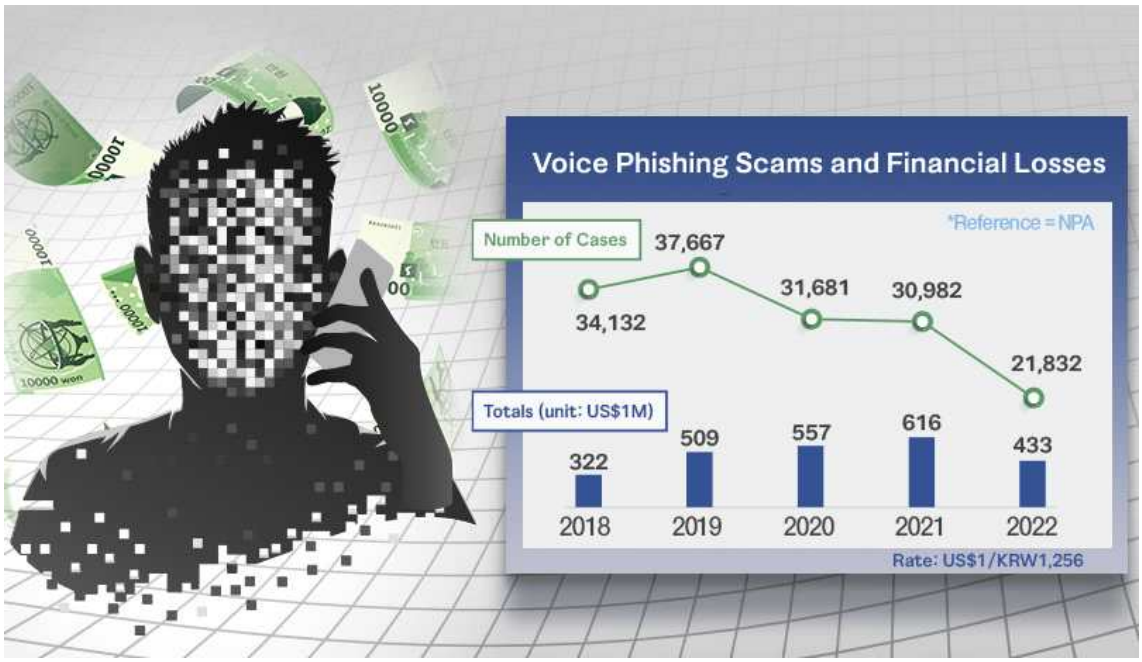
*Grouping criminals: Identification and clustering of the same persons through serial comparison processes of criminals' voices for each case

Categories	Crime 1	Crime 2	Crime 3
Accomplices	Accomplice ①: Role of detective **Accomplice ②: Role of prosecutor**	**Accomplice ②: Role of detective** Accomplice ③: Role of prosecutor	Accomplice ③: Role of detective Accomplice ④: Role of prosecutor

*It is possible to confirm that accomplices ① to ④ belong to the same criminal organization through analysis.

□ Meanwhile, according to the latest data released by the National Policy Agency (NPA), 156,249 voice phishing cases have occurred in Korea over the last five years. The damages has exceeded 3 trillion KRW, seriously affecting people's lives.

○ It is further analyzed that socioeconomic costs for crime prevention are rapidly increasing.



□ With the successful completion of the model development, IDAC will actively implement it in investigating and arresting voice phishing

criminals in cooperation with the NFS and the NPA and promote overseas expansion.

□ NFS will utilize the newly developed model to identify voice phishing scammers from the end of February.

○ About 10,000 voice data of voice phishing criminals in possession of the NFS will be analyzed for grouping criminal organizations and interrogating already arrested criminals for other crimes.

○ Moreover, the model will be shared with the NPA to enhance the speed of the first investigation and arrest rates of voice phishing criminals and then be gradually applied to investigate various voice-related crimes, including impersonating public institutions and deposit-based lease frauds, etc.

□ The voice phishing criminals' voices analyzed with the new model developed by the IDAC will be open on the website of the Financial Supervisory Service to raise awareness and prevention against voice phishing scams.

□ Meanwhile, MOIS will spread this new model as a new administrative Hanryu product to other countries.

○ With the training sessions and diverse international events to be held later this year, MOIS will promote the excellence and expandability of the new model for developing countries that want to learn Korea's latest voice-based forensic investigation techniques.

□ MOIS Vice Minister Han Chang-seob said, "the newly developed voice analysis model for voice phishing is a tangible achievement of the digital platform government, aimed at solving the current social issues through data analysis. MOIS will continue identifying analysis tasks that the people of Korea need and utilizing the analysis results to realize a competent data-based government."