Neurotechnology Algorithm Takes First Position in NIST FRIF Fingerprint Evaluation

Neurotechnology achieved the leading position in the NIST FRIF TE E1N evaluation for one-to-many fingerprint identification, outperforming other competitors.

Neurotechnology is a developer of high-precision algorithms and software based on deep neural networks and other AI-related technologies.

VILNIUS, LITHUANIA, December 22, 2025 /EINPresswire.com/ -- Neurotechnology, a provider of deep learning-based solutions and high-precision biometric identification technologies, today announced its leading performance in the National Institute of Standards and Technology (NIST) Friction Ridge Image and Features (FRIF) Technology Evaluation Exemplar One-to-Many (FRIF TE E1N). The company's latest fingerprint algorithm demonstrated superior accuracy, securing the top position across the majority of the evaluation's diverse testing categories.

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>
> *Evaldas Borcovas, Head of Biometrics Research for Neurotechnology*

The FRIF TE E1N evaluation is specifically designed to test the core template creation and search algorithms that make up the foundation of Automated Biometric Identification Systems (ABIS). The assessment covered three distinct operational scopes, ranging from single-finger identification to large-scale database searches.

Neurotechnology's algorithm demonstrated exceptional robustness across three varied testing environments:

 Class A: This category utilized plain impressions of the left and right index fingers, tested both individually and in two-finger combinations. Neurotechnology's algorithm demonstrated the best performance among all participants. It secured the top position for accuracy, proving its superior capability to identify subjects even when limited to single index finger records.

 Class B: The second category uses Identification Flat captures (slaps) in a 4-4-2 configuration, involving variations of right, left slap and thumbs tested against a full ten-finger enrollment

database. The algorithm showed exceptional precision in identifying simultaneous multi-finger impressions (slaps). The technology achieved a nearly perfect score in this category, with zero errors in the majority of experiments, highlighting its reliability for field operations.
 Class C: The last category utilized plain impressions of all ten fingers in a 4-4-1-1 configuration. The submission demonstrated top-tier performance, confirming the algorithm's robustness and suitability for the most demanding law enforcement scenarios.

“This same evaluation was last conducted in 2012, and while many tenders have relied on that old evaluation when selecting technologies, these results shift the technology leaderboard and reflect the current state-of-the-art technology,” said Evaldas Borcovas, Head of Biometrics Research for Neurotechnology. “Reaching the highest accuracy in the NIST FRIF TE E1N evaluation – and achieving zero-error rates in some experiments – reaffirms that our biometric technologies are suitable for the most demanding applications, such as law enforcement and national-scale identity programs.”

These results further Neurotechnology’s longstanding reputation for delivering precise and accurate fingerprint algorithms. The company’s technologies have consistently led NIST technology evaluations, including the Proprietary Fingerprint Template III (PFT III), Evaluation of Latent Fingerprint Technology (ELFT), Minutiae Interoperability Exchange (MINEX) III and Slap Fingerprint Segmentation Evaluation (SlapSeg) III.

This month the company was also awarded first place in UIDAI’s Biometrics SDK Benchmarking Challenge for the fingerprint modality.

About Neurotechnology

Neurotechnology is a developer of high-precision algorithms and software based on deep neural networks and other AI-related technologies. The company was launched in 1990 in Vilnius, Lithuania, with the key idea of leveraging neural network capabilities for various applications, such as biometric person identification, natural language processing (NLP), computer vision and artificial intelligence. The company's solutions and products have been used in more than 140 countries worldwide and in many national-scale projects for national ID, passports, elections, law enforcement and border control, including India's Aadhaar program, general elections in Ghana and Liberia, voter deduplication for the Democratic Republic of the Congo and other projects that collectively process the biometric data of nearly two billion people.

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