Taras Shevchenko National University of Kyiv (Ukraine),
University of Bielsko-Biala (Poland),
Glushkov Institute of Cybernetics of NAS of Ukraine,
Higher School Academy of Sciences of Ukraine,
Ivan Franko National University of Lviv (Ukraine),
University of Defence (Brno, Czech Republic),
Noosphere Ventures Corporation (Ukraine),
European Education Center (Georgia)

XL International Conference PROBLEMS OF DECISION MAKING UNDER UNCERTAINTIES (PDMU-2025)

September 30 - October 1, 2025

ABSTRACTS

Bielsko-Biala, Poland

Kyiv 2025

AUTHENTICATION INTERFACE CONCEALMENT FOR WEBSITES: CONCEPT AND APPLICATIONS

M.M. Sharapov

Taras Shevchenko National University of Kyiv, Ukraine mmsharapov@knu.ua

This paper introduces Authentication Interface Concealment (AIC), a concept for hiding website authentication mechanisms. Unlike "Security through Obscurity" [1] or "Steganoauthentication" [2,3], AIC offers a structured, multi-layered approach. Current methods for concealing admin access, such as dedicated login pages or unlinked "orphan pages," are flawed as they often rely on unreliable obscurity [1].

The proposed AIC concept operates on two levels. Level 1 conceals the login interface, revealing it only after specific user actions are detected by obfuscated JavaScript [4]. Level 2 conceals the authentication algorithm by analyzing keystroke dynamics (a user's unique typing rhythm), offering resilience against threats like keyloggers. This data can be verified on the server side using techniques like neural networks [5]. For enhanced protection, the system can be augmented with a High-Interaction Honeypot (HIHs).

References

- 1. Smith J. Effective Security by Obscurity // Journal of Cybersecurity and Privacy. 2022. Vol. 2, No.2. P. 349-376. https://doi.org/10.48550/arXiv.2205.01547
- 2. Forgáč R., Očkay M., Javurek M., Badidová B. Steganography Approach to Image Authentication Using Pulse Coupled Neural Network // Computing and Informatics. 2023. Vol. 42, No.3. P. 591-614. https://doi.org/10.31577/cai_2023_3_591
- 3. Sharma H., Mishra D.C., Sharma R.K., Kumar N. Multi-image steganography and authentication using crypto-stego techniques // Multimedia Tools and Applications. 2021.-Vol.~80.-P.~29067-29093. https://doi.org/10.1007/s11042-021-11068-8
- 4. Chen T., Li D., Zhang Y., Xie T. JSimpo: Structural Deobfuscation of JavaScript Programs // ACM Transactions on Software Engineering and Methodology. 2025. http://dx.doi.org/10.1145/3714460
- 5. Géron A. Hands-on machine learning with Scikit-Learn, Keras & TensorFlow (3rd ed.). O'Reilly Media, 2022.