Application of the Aho-Corasick algorithm to create a network intrusion detection system

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***Abstract*— ...................................................................................**

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***Keywords— (max.6)***

**1. INTRODUCTION**

In 2019, Positive Technologies specialists recorded more than 1,500 attacks; this is 19% more than in 2018. In 81% of cyber attacks, the victims were legal entities. At the end of the year, the five most frequently attacked industries included government agencies, industry, medicine, science and education, and the financial industry. [1]

**2. RELATED WORKS**

Precise Matching. The string matching problem can be simply formulated - for two strings T and P of length m and n, respectively, determine if P occurs in T. Naive or brute force search involves trying to match a pattern using a window size of length n and iterating over each position in T from left to right, resulting in the worst-case complexity O (mn). Boyer-Moore [2] and KMP [3] are two classic singlestring matching algorithms. Both of these algorithms also use a window of size n, but they use a skip or shift table to determine where to look next after each mismatch.

**3.1. METHODS (OPTIONAL).**

**3.2. FORMULATION OF THE PROBLEM (OPTIONAL)**

**3.3. ALGORITHM FOR SOLVING THE PROBLEM (OPTIONAL)**

**3.4. RESULTS OF SIMULATION MODELING (OPTIONAL)**

**3.5. THE OBTAINED RESEARCH RESULTS (optional)**

**4.1. RESULTS**

**4.2. DISCUSSION**

**5. CONCLUSION**

**ACKNOWLEDGMENTS (OPTIONAL).**

**PRACTICAL RECOMMENDATIONS (OPTIONAL).**

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