Міністерство освіти і науки України
Одеський національний технологічний університет
Вінницький національний технічний університет
Інститут комп`ютерної інженерії, автоматизації, робототехніки та програмування ім.П.Н.Платонова

ПРОГРАМА

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ГОЛОВА ПРЕЗИДІЇ

Єгоров Б.В., Президент ОНТУ, академік НААН України, д.т.н., професор

ЧЛЕНИ ПРЕЗИДІЇ

Іванченкова Л.В., Ректор Одеського національного технологічного університету, д.е.н., професор

Поварова Н.М., проректор з наукової роботи, к.т.н., доцент

ГОЛОВА ОРГКОМІТЕТУ

Котлик С.В., директор навчально-наукового інституту комп`ютерної інженерії, автоматизації, робототехніки та програмування ОНТУ, к.т.н., доц.

ЗАСТУПНИК ГОЛОВИ ОРГКОМІТЕТУ

Сергій Шестопалов, к.т.н., доц., каф. Комп'ютерної інженерії, ОНТУ

ЧЛЕНИ ОРГКОМІТЕТУ

Олексій Ізвалов, регіональний координатор Global Game Jam в Східній Європі, ETI ім.Ельворті,

Сергій Артеменко, зав.каф. Комп'ютерної інженерії, ОНТУ,

Михайло Кисленко, Unity Developer, DALS Games,

Олександр Романюк, зав.каф. Програмного забезпечення, ВНТУ,

Ольга Чолишкіна, директор Інституту комп'ютерно-інформаційних технологій і дизайну, МАУП,

Олександр Терьошин, Unity 3d developer, BlueGoji,

Павло Івасюк, Senior Snapchat JS Developer, BeVisioned,

Петро Горват, зав.каф. Комп'ютерних систем і мереж, ДВНЗ "Ужгородський національний університет".

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Комп'ютерні ігри та мультимедіа як інноваційний підхід до комунікації - 2023 / Матеріали III Всеукраїнської науково-технічної конференції молодих вчених, аспірантів і студентів, Одеса, 28-29 жовтня 2023 р**.** - Одеса, Видавництво ОНТУ, 2023 р. – 270 с.

Збірник включає матеріали доповідей учасників конференції, які об'єднані за тематичними напрямками конференції.

Збірник буде корисним як для фахівців і працівників фірм, зайнятих в області розробки та просування комп'ютерних ігор, так і для викладачів, магістрів і студентів вищих навчальних закладів, які навчаються за напрямами і спеціальностями програмного забезпечення, комп'ютерних наук, комп'ютерної інженерії, прикладної математики та обробки інформації, буде корисним професіоналам у сферах гейміфікації, кіберспорту, стрімінгу, віртуальної реальності, доповненої реальності, штучного інтелекту, машинного навчання, геймдізайну, саунддізайну.

Результати досліджень у збірнику представляють собою своєрідний зріз сучасного стану справ в перерахованих галузях знань, який може допомогти як фахівцям, так і студентам університетів скласти загальну картину розвитку комп'ютерних ігор ы мультимедіа та пов'язаних з ними питань.

Наукові праці згруповані за напрямками роботи конференції та наведені в алфавітному порядку прізвищ авторів.

Матеріали (тези доповідей) друкуються в авторській редакції. Відповідальність за якість та зміст публікацій несе автор.

Матеріали подано українською та англійською мовами.

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The methods are based on gaming platforms. The Steam platform provides a built-in tool for managing and analyzing user's game library. Also, there are other platforms such as Origin, Epic Games Store, UPlay, etc. Many gaming platforms also have features to manage and analyze user's game installations.

There are third-party Game Management Software such as GOG Galaxy. GOG's client includes features for managing and analyzing users' game libraries. Playnite is also a third-party game library manager that can help users organize and analyze their games from various platforms in one place.

The methods are based on Check Game Cache. For games on platforms like Steam, users can verify the integrity of game files. This can help identify and fix corrupted or missing files.

The methods are based on Performance Monitoring. Tools like MSI Afterburner or HWiNFO can be used to monitor the performance of users' hard drives while playing games. High disk usage or slow read/write speeds may indicate issues.

The methods are based on Drive Health Monitoring. This method is based on regularly monitoring the health of the user's hard drive using SMART (Self-Monitoring, Analysis, and Reporting Technology) tools. This can help users detect and address potential hardware issues early. This method of analyzing a user's hard drive for gaming software is about managing space and ensuring optimal performance and organization.

Thus, hard drive performance analysis techniques are important for gaming software.

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RESEARCH APPLICATION OF THE SPAM FILTERING AND SPAMMER DETECTION ALGORITHMS ON COMPUTER GAMES COMUNICATIONS

OLIINYK V., PODOROZHNIAK A., LIUBCHENKO N.
(oleynikwasya@gmail.com, andrii.podorozhniak@khpi.edu.ua, nataliia.liubchenko@khpi.edu.ua)
National Technical University “Kharkiv Polytechnic Institute”

The issue of spam recognition and mitigation in textual content using Artificial Intelligence has emerged as a crucial challenge in today's digital landscape. This problem is especially pertinent in the context of gaming chat platforms, such as Discord, SteamChat, Twitch, and many others. Spam not only disrupts the user experience but also poses significant threats to the integrity and functionality of these platforms. In this research, we delve into the intricacies of spam detection in text data, employing the power of Artificial Intelligence to develop robust solutions. By addressing this challenge, we aim to enhance the overall user experience and maintain the integrity of communication platforms. In the subsequent sections, we will explore the methods and techniques employed to combat spam in textual content, ultimately contributing to a safer and more enjoyable online environment.

As Pirker, Steinmaurer, and Karakas (2021) noted in their research titled "Beyond Gaming: The Potential of Twitch for Online Learning and Teaching," platforms like Twitch extend far beyond gaming and have become essential for online communities and educational purposes [1]. Consequently, the problem of spam extends beyond mere annoyance; it can affect the quality of interactions and the efficacy of these platforms for various purposes.

Moreover, the issue of spam and unsanctioned interference holds critical importance in the context of team-based online games. In such games, where coordination and communication are key to victory, a spam attack on a team's chat can lead to severe consequences, potentially resulting in the defeat of the targeted team.

Object of Research

The primary focus of this research is to investigate and apply spam filtering and spammer detection algorithms specifically tailored for computer game chat platforms. We aim to develop a deeper understanding of how these algorithms can be effectively employed to combat spam and identify malicious actors within the unique context of computer game chats.

Subject of Research

The subject of this study encompasses the various aspects related to spam detection and spammer identification within computer chat environments [2, 3]. We will explore the distinct characteristics of communication in online gaming, including the language, slang, and dynamics employed by players. Our analysis will be centered on identifying spam messages and detecting individuals or bots responsible for spamming activities within these platforms.

Methods of Research

To achieve our research objectives, we will employ a multifaceted approach that integrates several methods and techniques:

- Data Collection:

We will gather a substantial dataset comprising chat logs and messages from a diverse range of computer game chat platforms. These datasets will serve as the foundation for our research, allowing us to train and test our spam filtering and spammer detection algorithms effectively.

- Algorithm Development:

Our research will involve the creation and refinement of specialized spam filtering and spammer detection algorithms designed explicitly for computer game chats. These algorithms will take into account the specific language patterns, gaming terminology, and behavioral characteristics prevalent in these environments.

- Machine Learning:

We will harness the power of machine learning and natural language processing (NLP) techniques to develop models capable of distinguishing between legitimate messages and spam content [4]. These models will be trained on the collected datasets to enhance their accuracy and efficiency.

- Behavioral Analysis:

In addition to linguistic analysis, we will conduct behavioral analysis to identify patterns of behavior indicative of spammers and malicious actors within computer game chats [5]. This will involve tracking unusual or disruptive activities that disrupt the gaming experience.

- Validation and Evaluation:

To assess the effectiveness of our algorithms, we will employ rigorous validation and evaluation methodologies. This will include conducting real-world testing on live gaming chat platforms, as well as comparing our algorithms' performance against existing spam detection solutions.

- Ethical Considerations:

Throughout the research process, we will prioritize ethical considerations, including privacy and data security, to ensure that the implementation of spam filtering and spammer detection algorithms respects the rights and confidentiality of users within computer game chat environments.

By employing these comprehensive research methods, we aim to contribute valuable insights and practical solutions to enhance the quality of communication and user experience within computer game chats while mitigating the disruptive effects of spam and malicious activities.

Conclusions

This research endeavor was dedicated to the scientific and applied endeavor of combatting spam within the distinct realm of computer game chats. In this pursuit, we examined the utilization of spam filtering and spammer detection algorithms tailored to the context of computer gaming communication. Our study encompassed the following pivotal aspects:

- Acknowledging the Significance of Spam Detection: We recognized the paramount importance of spam detection within computer game chats and delved into the potential disruptions and threats posed by spam interference in the gaming community.

- In-depth Analysis of Spam Recognition Methods: Our research involved a comprehensive analysis of foundational spam recognition methods, including the utilization of the naive Bayesian classifier [6], support vector methods [7], multilayer perceptron neural networks [8], and convolutional neural networks [9], all fine-tuned for the unique language and communication patterns of gaming platforms.

- Exploration of Spammer Detection Approaches: [10] We investigated fundamental approaches to identifying and mitigating spammers within computer game chats, recognizing the necessity of distinguishing between legitimate players and malicious actors.

- Algorithm Development and Implementation: A pivotal outcome of this study was the development of a dedicated program designed to filter spam and detect spammers operating within computer game chat environments. This program incorporated four distinct algorithms for spam

recognition, bolstered by a proposed complex majority algorithm. Additionally, we meticulously scrutinized all text traffic to identify potential spammers effectively.

In amalgamating these components, our research project successfully addressed the scientific and practical challenges associated with spam detection and spammer identification within computer game chats. By tailoring our approach to the unique characteristics of gaming communication, we have contributed to the advancement of strategies for maintaining the integrity and quality of interactions within this vibrant online community.

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