



**ANALYZING BLOCKCHAIN TECHNOLOGY AS ESTONIA'S
CYBERSECURITY STRATEGY TO RESPOND TO ESTONIA
CYBER-ATTACKS IN 2007
(2012-2018)**

**UNDERGRADUATE FINAL PROJECT BY COURSE
Submitted as one of the requirements to obtain
Sarjana Sosial (S.Sos)**

By:

DITA AULIA SALMA

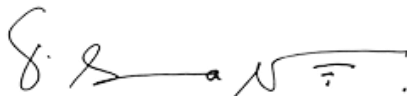
016201900143

**FACULTY OF HUMANITIES
INTERNATIONAL RELATIONS
STUDY PROGRAM
CIKARANG
February, 2023**

PANEL OF EXAMINER APPROVAL

The Panel of Examiners declare that the undergraduate thesis entitled “**Analyzing Blockchain Technology as Estonia’s Cybersecurity Strategy to Respond to Estonia’s Cyber Attacks in 2007 (2012-2018)**” that was submitted by Dita Aulia Salma majoring in International Relations from the Faculty of Humanities was assessed and approved to have passed the Oral Examination on February 21st, 2023

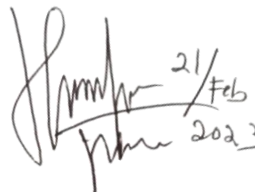
Panel of Examiner



(Fahlesa Wisa Fahru Munabari, Ph.D)

Chair of Panel Examiner

Final Project Advisor



(Harryanto Aryodiguno, Ph.D)

Examiner I

STATEMENT OF ORIGINALITY

In my capacity as an active student of President University and as the author of the undergraduate thesis/final project/business plan stated below:

Name : Dita Aulia Salma
Student ID number : 016201900143
Study Program : International Relations
Faculty : Humanities

I hereby declare that my undergraduate final project business plan entitled "Analyzing Blockchain Technology as Estonia's Cybersecurity Strategy to Respond to Estonia's Cyber Attacks in 2007 (2012-2018)" is, to the best of my knowledge and belief, an original piece of work based on sound academic principles. If there is any plagiarism, including but not limited to Artificial Intelligence plagiarism, is detected in this undergraduate thesis/final project/business plan, I am willing to be personally responsible for the consequences of these acts of plagiarism, and accept the sanctions against these acts in accordance with the rules and policies of President University.

I also declare that this work, either in whole or in part, has not been submitted to another university to obtain a degree.

Cikarang, 8th January 2023



(Dita Aulia Salma)

SCIENTIFIC PUBLICATION APPROVAL FOR ACADEMIC INTEREST

As a student of the President University, I, the undersigned:

Name : Dita Aulia Salma
Student ID number : 016201900143
Study program : International Relations

for the purpose of development of science and technology, certify, and approve to give President University a non-exclusive royalty-free right upon my final report with the title:

“ANALYZING BLOCKCHAIN TECHNOLOGY AS ESTONIA’S CYBERSECURITY STRATEGY TO RESPOND TO ESTONIA’S CYBER ATTACKS IN 2007 (2012-2018)”

With this non-exclusive royalty-free right, President University is entitled to converse, to convert, to manage in a database, to maintain, and to publish my final report. There are to be done with the obligation from President University to mention my name as the copyright owner of my final report.

This statement I made in truth.

Cikarang, 8th January 2023



(Dita Aulia Salma)

ADVISOR'S APPROVAL FOR PUBLICATION

As a lecturer of the President University, I, the undersigned:

Advisor's Name : Fahlesa Wisa Fahru Munabari

NIDN :

Study program : International Relations

Faculty : Humanities

declare that following thesis:

Title of undergraduate thesis : Analyzing Blockchain Technology as
Estonia's Cybersecurity Strategy to
Respond to Estonia's Cyber Attacks in
2007 (2012-2018)

Undergraduate Thesis author : Dita Aulia Salma

Student ID number : 016201900143

will be published in **journal** / **institution's repository** / **proceeding** / **unpublish** /

Cikarang, 8th January 2023



(Fahlesa Wisa Fahru Munabari, Ph.D)

PLAGIARISM CHECK RESULT TURNITIN

Dita-Turnitin

ORIGINALITY REPORT

9 %	5 %	4 %	5 %
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

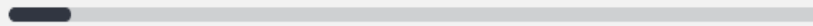
PRIMARY SOURCES

1	web.stanford.edu Internet Source	2 %
2	Submitted to Kozep-europai Egyetem Student Paper	1 %
3	Charles L. Glaser, Chairn Kaufmann. "What Is the Offense-Defense Balance and How Can We Measure It?", International Security, 1998 Publication	1 %
4	Aiyub, D Suryadi, S Fatimah, Kusnandi. "Investigation of Watson-Glaser critical thinking skills of junior high school students in solving mathematical problems", Journal of Physics: Conference Series, 2021 Publication	<1 %
5	Submitted to University of North Carolina, Greensboro Student Paper	<1 %
6	Submitted to Rutgers University, New Brunswick Student Paper	<1 %

PLAGIARISM CHECK RESULT GPT ZERO

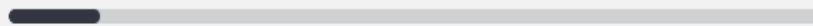
Stats

Average Perplexity Score: 77.514



A document's perplexity is a measurement of the randomness of the text

Burstiness Score: 112.657



A document's burstiness is a measurement of the variation in perplexity

Your sentence with the highest perplexity, "*(Haataja, 2017) Only specific entropy types that involve an entity's*", has a perplexity of: 619

© 2022-2023 GPTZero

ABSTRACT

This article attempts to show how Blockchain Technology became one of Estonia's cybersecurity strategies after the cyber-attacks that occurred in 2007, allowing Estonia to show that they could strengthen their cyber security through Offense-Defense Theory. This article will show the offensive behavior that makes Estonia go on the defensive. In his explanation regarding Blockchain Technology as an Estonian Cybersecurity Strategy, here will be shown the steps taken by Estonia after the cyber-attack which was a response to the domination of Russian offensive behavior which has a history due to the Bronze Night. Furthermore, this article will show Blockchain Technology in the period 2012 to 2018 as a form of Estonian defense behavior. Thus, it can be seen that with Blockchain Technology, Estonia has become a security balancer both with Russia which is the most rational cause for Estonia to strengthen its cyber security and with the outside world, considering that the actors in cyber war cannot be determined.

Keywords: *Blockchain, Technology, Cybersecurity Strategy, Estonia, Cyber Attack*

ABSTRAK

Artikel ini berusaha menunjukkan bagaimana Teknologi Blockchain menjadi salah satu strategi cybersecurity Estonia setelah serangan cyber yang terjadi pada 2007 yang memungkinkan Estonia menunjukkan bahwa mereka mampu memperkuat keamanan cybernya melalui Teori Offense-Defense. Artikel ini akan menunjukkan perilaku ofensif yang membuat Estonia menjadi defensif. Dalam penjelasannya terkait Blockchain Technology sebagai Strategi Cybersecurity Estonia disini akan ditunjukkan langkah-langkah yang diambil Estonia setelah serangan cyber tersebut yang merupakan tanggapan terhadap dominasi perilaku ofensif Russia yang memiliki history karena Bronze Night. Selanjutnya, Artikel ini akan menunjukkan Teknologi Blockchain dalam kurun waktu 2012 hingga 2018 sebagai salah satu bentuk perilaku defense Estonia. Dengan demikian, dapat terlihat bahwa dengan Blockchain Technology, Estonia menjadi penyeimbang keamanan baik dengan Russia yang paling rasional menjadi penyebab Estonia memperkuat keamanan cybernya maupun dengan dunia luar, mengingat actor dalam perang cyber tidak bisa ditentukan dengan jelas.

Kata Kunci: *Blockchain, Teknologi, Strategi Keamanan Siber, Estonia, Serangan Siber*

ACKNOWLEDGEMENT

I would like to express my greatest gratitude to President University, especially the International Relations Study Program, which has provided me with outstanding experiences and memorable achievements as a student. Furthermore, the university also helped me in acquiring good English abilities in terms of academic writing and verbal where these opportunities sadly lack in various universities in Indonesia.

Next, I would like to say thank you for the absolute blessing from the almighty God and my parents who have always supported me. Their action cannot be thanked enough and I promise to do my best in achieving my dreams and make both of you proud.

I also shall express my praise to my final project advisor Mr. Fahlesa Wisah Fahru Munabari, Ph.D. I will never forget all of the best things you explained in class and during a mentoring session. All of the learning I got from you is the most valuable.

Lastly, I want to thank me for believing in me. To the closest person Christy Anastasya, Khairani Raisha, Diva Evalin, Lalu Teguh, Indah Safhira, Dezfozene Christianity, and Monalisa Mentari who always support and encourage me in the process of working on this journal. Thank you for always comforting me and cherishing all my work

TABLE OF CONTENTS

PANEL OF EXAMINER APPROVAL	i
STATEMENT OF ORIGINALITY	ii
SCIENTIFIC PUBLICATION APPROVAL FOR ACADEMIC INTEREST	iii
ADVISOR’S APPROVAL FOR PUBLICATION	iv
PLAGIARISM CHECK RESULT TURNITIN.....	v
PLAGIARISM CHECK RESULT GPT ZERO.....	vi
ABSTRACT.....	vii
ACKNOWLEDGEMENT	ix
TABLE OF CONTENTS.....	x
CHAPTER I INTRODUCTION	1
1.1 Background	1
1.2 Literature Review	3
CHAPTER II THEORETICAL FRAMEWORK	7
2.1 Offensive-Defensive Theory	7
CHAPTER III RESEARCH METHODOLOGY	11
CHAPTER IV RESEARCH RESULT	12
4.1 Estonia’s Cyber Attack in 2007.....	12
4.2 Blockchain Technology as Estonia’s Cybersecurity Strategy.....	15
4.2.1 Estonia’s Response to 2007 cyber-attacks	16
4.2.2 Blockchain Technology in Estonia	18
CHAPTER V CONCLUSION.....	22
REFERENCES.....	24