

**Dedicated**

To my beloved parents and younger brother.





Department of Computer Science & Engineering  
Tezpur University  
Napaam, Tezpur- 784028, Assam, India.

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### Declaration

I declare that this written submission represents my ideas in my own words and where others ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

Date: 09/09/2025

A handwritten signature in blue ink, appearing to be 'Birglang Bargayary', written over a horizontal line.

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### Certificate of Supervisor

This is to certify that the thesis entitled “**Enhancing Security in Software-Defined Networks using Blockchain Smart Contract**” submitted to Tezpur University in the Department of Computer Science and Engineering under the School of Engineering in partial fulfillment of the award of the degree of Doctor of Philosophy in Computer Science and Engineering is a record of research work carried out by **Mr. Birglang Bargayary** under my supervision and guidance.

All help received by him from various sources have been duly acknowledged. No part of this thesis has been submitted elsewhere for award of any other degree.

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10/9/24

**Place:** Tezpur



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Date: 09/09/2025



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**Certificate of Examiner**

This is to certify that the thesis entitled "**Enhancing Security in Software-Defined Networks using Blockchain Smart Contract**" submitted by **Mr. Birglang Bargayary** to Tezpur University in the Department of Computer Science and Engineering under the School of Engineering in partial fulfillment of the requirements for the award of the degree of Doctor of Philosophy in Computer Science and Engineering has been examined by us on **9th September, 2025** and found to be satisfactory.

The Committee recommends for award of the degree of Doctor of Philosophy.

Signature of Principal Supervisor

Signature of External Examiner

# List of Tables

2.1	Summary of works presented in literature for OpenFlow rule security in Software-Defined Network . . . . .	22
3.1	Notation Table . . . . .	28
3.2	Experimental Setup Table . . . . .	39
3.3	Detection and Delay Comparison Table . . . . .	44
3.4	Time complexity comparison table . . . . .	49
4.1	Symbol Table . . . . .	56
4.2	The Device Specification Table . . . . .	70
4.3	Latency for new Master controller Selection . . . . .	72
5.1	Action list with their description. . . . .	91
5.2	SDN Configuration. . . . .	98
5.3	Average latency for signature verification, voting, and policy enforcement with increasing proposal request. . . . .	102
5.4	Latency comparison due to the DDoS attack. . . . .	108



6.1	Average Latency and Transaction cost for the execution of Smart Contract functions . . . . .	123
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# List of Figures

1.1	SDN Architecture . . . . .	3
1.2	OpenFlow Structure . . . . .	4
1.3	Transaction Processing . . . . .	8
1.4	Block diagram of thesis organization. . . . .	17
3.1	Proposed Blockchain-Enabled SDN flow security System Architecture. . . . .	27
3.2	Threat Model of flow rule modification in SDN network. . . . .	31
3.3	Sequence diagram of exchange messages for flow rule verification. . . . .	37
3.4	The execution of addRules() function in Smart Contract. . . . .	40
3.5	The execution of valid verifyRule() function in Smart Contract. . . . .	40
3.6	The execution of invalid verifyRule() function in Smart Contract. . . . .	41
3.7	A sample of synthetic flow modification attack generated from POSTMAN API. . . . .	42
3.8	Execution time comparison with respect to the number of Flows. . . . .	43
3.9	Gas Consumption comparison with respect to the number of Flows. . . . .	45
3.10	Gas Consumption comparison for different SC functions. . . . .	46
3.11	Overhead on Controller CPU with an increasing number of Flow_Mod packets. . . . .	47

4.1	Proposed distributed SDBlock-IoT Architecture. . . . .	54
4.2	Controller Consensus Sequence Diagram. . . . .	66
4.3	Network topology used in our experiment. . . . .	71
4.4	Latency for controller recovery due to flow mod attack. . . . .	72
4.5	Controller overhead on different numbers of flow modification attacks. . . . .	73
4.6	Flow verification latency with an increasing number of flow rules. . . . .	74
4.7	Transaction Cost for SC function execution. . . . .	75
4.8	Flow verification latency with an increasing number of flow rules on simulated network. . . . .	76
4.9	Latency for controller recovery due to flow mod attack on the simulated network. . . . .	77
5.1	Proposed Multi-Domain verification of network flows in SDN using Blockchain . . . . .	83
5.2	Flowchart of the proposed proposal verification process . . . . .	93
5.3	Experimental topology for simulation of the proposed work. . . . .	98
5.4	Throughput and total latency of the proposal verification with increasing number of proposal. . . . .	104
5.5	Latency comparison of the proposed method with other existing methods during DDoS attack. . . . .	107
5.6	Latency comparison of the proposed method with increasing traffic during DDoS attack. . . . .	109
5.7	CPU consumption of endorser/controller due to proposal verification in DDoS attack scenario. . . . .	110
6.1	Proposed System Architecture. . . . .	118

6.2	Sequence diagram of message passing among different components. . . . .	120
6.3	Successful UserAuth() function execution result. . . . .	122
6.4	Failed UserAuth() function execution result. . . . .	122



