



ARTI AI

# Smart Contract Audit Report

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# AUDITED DETAILS

## Audited Project

Project name	Token ticker	Blockchain
ARTI AI	AAI	Binance Smart Chain

## Addresses

Contract address	0xAe9369D43Dd0bC8d97e537035b4C64ff11a39F45
Contract deployer address	0x14e11CE06b510A2C166a5c01a50c6c8be19dF2F1

## Project Website

<a href="https://arti-ai.store/">https://arti-ai.store/</a>
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## Codebase

<a href="https://bscscan.com/address/0xAe9369D43Dd0bC8d97e537035b4C64ff11a39F45#code">https://bscscan.com/address/0xAe9369D43Dd0bC8d97e537035b4C64ff11a39F45#code</a>
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# SUMMARY

Arti AI is a revolutionary new technology that allows anyone to generate stunning images and pictures with just a few simple descriptions. With Arti AI, you can bring your creative visions to life, even if you have no prior experience or training in art.

## Contract Summary

### Documentation Quality

ARTI AI provides a very good documentation with standard of solidity base code.

- The technical description is provided clearly and structured and also don't have any high risk issue.

### Code Quality

The Overall quality of the basecode is standard.

- Standard solidity basecode and rules are already followed by ARTI AI with the discovery of several low issues.

### Test Coverage

Test coverage of the project is 100% ( Through Codebase )

## Audit Findings Summary

- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 178, 195, 211, 233, 235, 247, 248, 262, 264, 725, 725, 725, 726, 726, 886, 886, 887, 897, 898, 914, 943 and 962.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 6.
- SWC-110 SWC-123 | It is recommended to use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 903, 904, 932 and 933.

# CONCLUSION

We have audited the ARTI AI project released on February-2023 to discover issues and identify potential security vulnerabilities in ARTI AI Project. This process is used to find technical issues and security loopholes which might be found in the smart contract.

The security audit report provides a satisfactory result with some low-risk issues.

The issues found in the ARTI AI smart contract code do not pose a considerable risk. The writing of the contract is close to the standard of writing contracts in general. The low-risk issues found are some arithmetic operation issues, a floating pragma is set and out of bounds array access which the index access expression can cause an exception in case of the use of an invalid array index value.

# AUDIT RESULT

Article	Category	Description	Result
Default Visibility	SWC-100 SWC-108	Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously.	PASS
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.	ISSUE FOUND
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	PASS
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	ISSUE FOUND
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS
Unprotected Ether Withdrawal	SWC-105	Due to missing or insufficient access controls, malicious parties can withdraw from the contract.	PASS
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	PASS
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	PASS
Uninitialized Storage Pointer	SWC-109	Uninitialized local storage variables can point to unexpected storage locations in the contract.	PASS
Assert Violation	SWC-110 SWC-123	Properly functioning code should never reach a failing assert statement.	ISSUE FOUND
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	PASS
Delegate call to Untrusted Callee	SWC-112	Delegatecalls should only be allowed to trusted addresses.	PASS

DoS (Denial of Service)	SWC-113 SWC-128	Execution of the code should never be blocked by a specific contract state unless required.	PASS
Race Conditions	SWC-114	Race Conditions and Transactions Order Dependency should not be possible.	PASS
Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	PASS
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	PASS
Signature Unique ID	SWC-117 SWC-121 SWC-122	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.	PASS
Incorrect Constructor Name	SWC-118	Constructors are special functions that are called only once during the contract creation.	PASS
Shadowing State Variable	SWC-119	State variables should not be shadowed.	PASS
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	PASS
Write to Arbitrary Storage Location	SWC-124	The contract is responsible for ensuring that only authorized user or contract accounts may write to sensitive storage locations.	PASS
Incorrect Inheritance Order	SWC-125	When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/.	PASS
Insufficient Gas Griefing	SWC-126	Insufficient gas grieving attacks can be performed on contracts which accept data and use it in a sub-call on another contract.	PASS
Arbitrary Jump Function	SWC-127	As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value.	PASS

Typographical Error	SWC-129	A typographical error can occur for example when the intent of a defined operation is to sum a number to a variable.	PASS
Override control character	SWC-130	Malicious actors can use the Right-To-Left-Override unicode character to force RTL text rendering and confuse users as to the real intent of a contract.	PASS
Unused variables	SWC-131 SWC-135	Unused variables are allowed in Solidity and they do not pose a direct security issue.	PASS
Unexpected Ether balance	SWC-132	Contracts can behave erroneously when they strictly assume a specific Ether balance.	PASS
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	PASS
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.	PASS
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	PASS



# SMART CONTRACT ANALYSIS

Started	Friday Feb 03 2023 22:10:46 GMT+0000 (Coordinated Universal Time)
Finished	Saturday Feb 04 2023 01:11:43 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	ARTIAI.sol

## Detected Issues

ID	Title	Severity	Status
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged

SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 178

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
177     unchecked {  
178         _approve(sender, _msgSender(), currentAllowance - amount);  
179     }  
180 }  
181  
182
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 195

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAl.sol

## Locations

```
194     spender,  
195     _allowances[_msgSender()][spender] + addedValue  
196 );  
197 return true;  
198 }  
199
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 211

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
210     unchecked {  
211         _approve(_msgSender(), spender, currentAllowance - subtractedValue);  
212     }  
213  
214     return true;  
215
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 233

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAl.sol

## Locations

```
232     unchecked {  
233         _balances[sender] = senderBalance - amount;  
234     }  
235     _balances[recipient] += amount;  
236  
237
```

# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 235

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAl.sol

## Locations

```
234     }  
235     _balances[recipient] += amount;  
236  
237     emit Transfer(sender, recipient, amount);  
238  
239
```

# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 247

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAl.sol

## Locations

```
246
247  _totalSupply += amount;
248  _balances[account] += amount;
249  emit Transfer(address(0), account, amount);
250
251
```



# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 248

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
247 _totalSupply += amount;  
248 _balances[account] += amount;  
249 emit Transfer(address(0), account, amount);  
250  
251 _afterTokenTransfer(address(0), account, amount);  
252
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 262

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
261     unchecked {  
262         _balances[account] = accountBalance - amount;  
263     }  
264     _totalSupply -= amount;  
265  
266
```

# SWC-101 | ARITHMETIC OPERATION "-=" DISCOVERED

LINE 264

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAl.sol

## Locations

```
263     }  
264     _totalSupply -= amount;  
265  
266     emit Transfer(account, address(0), amount);  
267  
268
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 725

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
724
725     swapTokensAtAmount = (totalSupply_ * (10**18)) / 5000;
726     _mint(owner(), totalSupply_ * (10**18));
727 }
728
729
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 725

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
724
725     swapTokensAtAmount = (totalSupply_ * (10**18)) / 5000;
726     _mint(owner(), totalSupply_ * (10**18));
727 }
728
729
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 725

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
724
725     swapTokensAtAmount = (totalSupply_ * (10**18)) / 5000;
726     _mint(owner(), totalSupply_ * (10**18));
727 }
728
729
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 726

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
725     swapTokensAtAmount = (totalSupply_ * (10**18)) / 5000;  
726     _mint(owner(), totalSupply_ * (10**18));  
727 }  
728  
729 receive() external payable {}  
730
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 726

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
725     swapTokensAtAmount = (totalSupply_ * (10**18)) / 5000;  
726     _mint(owner(), totalSupply_ * (10**18));  
727 }  
728  
729 receive() external payable {}  
730
```



# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 886

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
885     }  
886     uint256 fees = (amount * _totalFees) / 100;  
887     amount = amount - fees;  
888  
889     super._transfer(from, address(this), fees);  
890
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 886

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
885     }  
886     uint256 fees = (amount * _totalFees) / 100;  
887     amount = amount - fees;  
888  
889     super._transfer(from, address(this), fees);  
890
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 887

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
886     uint256 fees = (amount * _totalFees) / 100;
887     amount = amount - fees;
888
889     super._transfer(from, address(this), fees);
890 }
891
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 897

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
896 function swapAndLiquify(uint256 tokens) private {  
897     uint256 half = tokens / 2;  
898     uint256 otherHalf = tokens - half;  
899  
900     uint256 initialBalance = address(this).balance;  
901 }
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 898

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
897  uint256 half = tokens / 2;  
898  uint256 otherHalf = tokens - half;  
899  
900  uint256 initialBalance = address(this).balance;  
901  
902
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 914

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
913
914     uint256 newBalance = address(this).balance - initialBalance;
915
916     uniswapV2Router.addLiquidityETH{value: newBalance}(
917         address(this),
918
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 943

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAl.sol

## Locations

```
942
943     uint256 newBalance = address(this).balance - initialBalance;
944
945     sendBNB(payable(wallet01), newBalance);
946 }
947
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 962

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- ARTIAI.sol

## Locations

```
961     require(  
962         newAmount > totalSupply() / 100000,  
963         "SwapTokensAtAmount must be greater than 0.001% of total supply"  
964     );  
965     swapTokensAtAmount = newAmount;  
966
```



## SWC-103 | A FLOATING PRAGMA IS SET.

LINE 6

### low SEVERITY

The current pragma Solidity directive is `""^0.8.7"`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

### Source File

- ARTIAI.sol

### Locations

```
5 // SPDX-License-Identifier: MIT
6 pragma solidity ^0.8.7;
7
8 interface IERC20 {
9     function totalSupply() external view returns (uint256);
10
```

# SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 903

## low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

## Source File

- ARTIAl.sol

## Locations

```
902     address[] memory path = new address[](2);
903     path[0] = address(this);
904     path[1] = uniswapV2Router.WETH();
905
906     uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
907
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 904

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- ARTIAl.sol

### Locations

```
903     path[0] = address(this);
904     path[1] = uniswapV2Router.WETH();
905
906     uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
907         half,
908
```

# SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 932

## low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

## Source File

- ARTIAI.sol

## Locations

```
931     address[] memory path = new address[](2);
932     path[0] = address(this);
933     path[1] = uniswapV2Router.WETH();
934
935     uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
936
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 933

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- ARTIAl.sol

### Locations

```
932  path[0] = address(this);
933  path[1] = uniswapV2Router.WETH();
934
935  uniswapV2Router.swapExactTokensForETHSupportingFeeOnTransferTokens(
936  tokenAmount,
937
```

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This is a limited report on our findings based on our analysis, in accordance with good industry practice as of the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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## ABOUT US

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