



# Smart Contract Audit

FOR

# MatrixGPT

DATED : 12 FEB 23'



# AUDIT SUMMARY

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**Project name** – MatrixGPT

**Date:** 12 February, 2023

**Scope of Audit-** Audit Ace was consulted to conduct the smart contract audit of the solidity source codes.

**Audit Status:** **Passed**

## Issues Found

Status	Critical	High	Medium	Low	Suggestion
Open	0	0	0	0	0
Acknowledged	0	0	0	0	0
Resolved	0	0	0	0	0

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# USED TOOLS

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## Tools:

### 1- Manual Review:

a line by line code review has been performed by audit ace team.

### 2- BSC Test Network:

all tests were done on BSC Test network, each test has its transaction has attached to it.

### 3- Slither : Static Analysis

**Testnet Link:** all tests were done using this contract, tests are done on BSC Testnet

<https://testnet.bscscan.com/token/0x26135d9b8d22e6d67a77e797907d9cc63a674e6e>

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# Token Information

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**Token Name :** MatrixGPT

**Token Symbol:** MAI

**Decimals:** 18

**Token Supply:** 1,000,000,000

**Token Address:** Not deployed on chain

**Checksum:**

e880433f4bc0ef1faa57c0f9c1a4f09fdcadde77f90cf  
f67cbe23b8000289cafc

**Owner:** Not deployed

**Deployer:**

Not deployed

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# TOKEN OVERVIEW

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## **Fees:**

Buy Fees: 1%

Sell Fees: 1%

Transfer Fees: 0%

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**Fees Privilige:** None

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**Ownership :** Owned

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**Minting:** No mint function

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**Max Tx Amount/ Max Wallet Amount:** No

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**Blacklist:** No

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**Other Privileges:** No

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# AUDIT METHODOLOGY

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The auditing process will follow a routine as special considerations by Auditace:

- Review of the specifications, sources, and instructions provided to Auditace to make sure the contract logic meets the intentions of the client without exposing the user's funds to risk.
  - Manual review of the entire codebase by our experts, which is the process of reading source code line-by-line in an attempt to identify potential vulnerabilities.
  - Specification comparison is the process of checking whether the code does what the specifications, sources, and instructions provided to Auditace describe.
  - Test coverage analysis determines whether the test cases are covering the code and how much code is exercised when we run the test cases.
  - Symbolic execution is analysing a program to determine what inputs cause each part of a program to execute.
  - Reviewing the codebase to improve maintainability, security, and control based on the established industry and academic practices.
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# VULNERABILITY CHECKLIST

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- |  |   |
|--|---|
|  Return values of low-level calls  |  Gasless Send                  |
|  Private modifier                  |  Using block.timestamp         |
|  Multiple Sends                    |  Re-entrancy                   |
|  Using Suicide                    |  Tautology or contradiction   |
|  Gas Limitand Loops              |  Timestamp Dependence        |
|  Address hardcoded               |  Revert/require functions    |
|  Exception Disorder              |  Use of tx.origin            |
|  Using inline assembly           |  Integer overflow/underflow  |
|  Divide before multiply          |  Dangerous strict equalities |
|  Missing Zero Address Validation |  Using SHA3                  |
|  Compiler version not fixed      |  Using throw                 |
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# CLASSIFICATION OF RISK

## Severity

## Description

### ◆ Critical

These vulnerabilities could be exploited easily and can lead to asset loss, data loss, asset, or data manipulation. They should be fixed right away.

### ◆ High-Risk

A vulnerability that affects the desired outcome when using a contract, or provides the opportunity to use a contract in an unintended way.

### ◆ Medium-Risk

A vulnerability that could affect the desired outcome of executing the contract in a specific scenario.

### ◆ Low-Risk

A vulnerability that does not have a significant impact on possible scenarios for the use of the contract and is probably subjective.

### ◆ Gas Optimization /Suggestion

A vulnerability that has an informational character but is not affecting any of the code.

## Findings

### Severity

### Found

#### ◆ Critical

0

#### ◆ High-Risk

0

#### ◆ Medium-Risk

0

#### ◆ Low-Risk

0

#### ◆ Gas Optimization / Suggestions

0





# INHERITANCE TREE



# POINTS TO NOTE

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- **Owner is not able to change buy/sell/transfer taxes (1% buy and 1% sell)**
  - **Owner is not able to blacklist an arbitrary wallet**
  - **Owner is not able to set max buy/sell/transfer amounts**
  - **Owner is not able to disable trades**
  - **Owner is not able to mint new tokens**
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
































# CONTRACT ASSESMENT

Contract	Type	Bases			
:-----: :-----: :-----: :-----: :-----:					
L	<b>**Function Name**</b>	<b>**Visibility**</b>	<b>**Mutability**</b>	<b>**Modifiers**</b>	
<b>**Context**</b>   Implementation					
L	_msgSender	Internal	🔒		
L	_msgData	Internal	🔒		
<b>**Ownable**</b>   Implementation   Context					
L	<Constructor>	Public	!   🛑	NO	!
L	owner	Public	!	NO	!
L	renounceOwnership	Public	!   🛑	onlyOwner	
L	transferOwnership	Public	!   🛑	onlyOwner	
L	_transferOwnership	Internal	🔒   🛑		
<b>**SafeMath**</b>   Library					
L	add	Internal	🔒		
L	sub	Internal	🔒		
L	sub	Internal	🔒		
L	mul	Internal	🔒		
L	div	Internal	🔒		
L	div	Internal	🔒		
L	mod	Internal	🔒		
L	mod	Internal	🔒		
<b>**SafeMathInt**</b>   Library					
L	mul	Internal	🔒		
L	div	Internal	🔒		
L	sub	Internal	🔒		
L	add	Internal	🔒		
L	abs	Internal	🔒		
L	toUint256Safe	Internal	🔒		
<b>**SafeMathUint**</b>   Library					
L	toInt256Safe	Internal	🔒		
<b>**IterableMapping**</b>   Library					
L	get	Internal	🔒		
L	getIndexOfKey	Internal	🔒		
L	getKeyAtIndex	Internal	🔒		
L	size	Internal	🔒		
L	set	Internal	🔒   🛑		



# CONTRACT ASSESMENT

```
|  | remove | Internal |  |  | |
| | | | |
| **IUniswapV2Factory** | Interface | | |
|  | feeTo | External |  | | NO! |
|  | feeToSetter | External |  | | NO! |
|  | getPair | External |  | | NO! |
|  | allPairs | External |  | | NO! |
|  | allPairsLength | External |  | | NO! |
|  | createPair | External |  |  | NO! |
|  | setFeeTo | External |  |  | NO! |
|  | setFeeToSetter | External |  |  | NO! |
| | | | |
| **IUniswapV2Pair** | Interface | | |
|  | name | External |  | | NO! |
|  | symbol | External |  | | NO! |
|  | decimals | External |  | | NO! |
|  | totalSupply | External |  | | NO! |
|  | balanceOf | External |  | | NO! |
|  | allowance | External |  | | NO! |
|  | approve | External |  |  | NO! |
|  | transfer | External |  |  | NO! |
|  | transferFrom | External |  |  | NO! |
|  | DOMAIN_SEPARATOR | External |  | | NO! |
|  | PERMIT_TYPEHASH | External |  | | NO! |
|  | nonces | External |  | | NO! |
|  | permit | External |  |  | NO! |
|  | MINIMUM_LIQUIDITY | External |  | | NO! |
|  | factory | External |  | | NO! |
|  | token0 | External |  | | NO! |
|  | token1 | External |  | | NO! |
|  | getReserves | External |  | | NO! |
|  | price0CumulativeLast | External |  | | NO! |
|  | price1CumulativeLast | External |  | | NO! |
|  | kLast | External |  | | NO! |
|  | mint | External |  |  | NO! |
|  | burn | External |  |  | NO! |
|  | swap | External |  |  | NO! |
|  | skim | External |  |  | NO! |
|  | sync | External |  |  | NO! |
|  | initialize | External |  |  | NO! |
| | | | |
```



# CONTRACT ASSESMENT

```
| **IUniswapV2Router01** | Interface | |||
| | factory | External ! | | NO! |
| | WETH | External ! | | NO! |
| | addLiquidity | External ! | | NO! |
| | addLiquidityETH | External ! | | NO! |
| | removeLiquidity | External ! | | NO! |
| | removeLiquidityETH | External ! | | NO! |
| | removeLiquidityWithPermit | External ! | | NO! |
| | removeLiquidityETHWithPermit | External ! | | NO! |
| | swapExactTokensForTokens | External ! | | NO! |
| | swapTokensForExactTokens | External ! | | NO! |
| | swapExactETHForTokens | External ! | | NO! |
| | swapTokensForExactETH | External ! | | NO! |
| | swapExactTokensForETH | External ! | | NO! |
| | swapETHForExactTokens | External ! | | NO! |
| | quote | External ! | | NO! |
| | getAmountOut | External ! | | NO! |
| | getAmountIn | External ! | | NO! |
| | getAmountsOut | External ! | | NO! |
| | getAmountsIn | External ! | | NO! |
| |||||
| **IUniswapV2Router02** | Interface | IUniswapV2Router01 |||
| | removeLiquidityETHSupportingFeeOnTransferTokens | External ! | | NO! |
| | removeLiquidityETHWithPermitSupportingFeeOnTransferTokens | External ! | | NO! |
| | swapExactTokensForTokensSupportingFeeOnTransferTokens | External ! | | NO! |
| | swapExactETHForTokensSupportingFeeOnTransferTokens | External ! | | NO! |
| | swapExactTokensForETHSupportingFeeOnTransferTokens | External ! | | NO! |
| |||||
| **IERC20** | Interface | |||
| | totalSupply | External ! | | NO! |
| | balanceOf | External ! | | NO! |
| | allowance | External ! | | NO! |
| | transfer | External ! | | NO! |
| | approve | External ! | | NO! |
| | transferFrom | External ! | | NO! |
| |||||
| **IERC20Metadata** | Interface | IERC20 |||
| | name | External ! | | NO! |
| | symbol | External ! | | NO! |
| | decimals | External ! | | NO! |
| |||||
| **ERC20** | Implementation | Context, IERC20, IERC20Metadata |||
```

# CONTRACT ASSESMENT

```

|  | <Constructor> | Public ! |  | NO! |
|  | name | Public ! | | NO! |
|  | symbol | Public ! | | NO! |
|  | decimals | Public ! | | NO! |
|  | totalSupply | Public ! | | NO! |
|  | balanceOf | Public ! | | NO! |
|  | transfer | Public ! |  | NO! |
|  | allowance | Public ! | | NO! |
|  | approve | Public ! |  | NO! |
|  | transferFrom | Public ! |  | NO! |
|  | increaseAllowance | Public ! |  | NO! |
|  | decreaseAllowance | Public ! |  | NO! |
|  | _transfer | Internal  |  | |
|  | _mint | Internal  |  | |
|  | _burn | Internal  |  | |
|  | _approve | Internal  |  | |
|  | _beforeTokenTransfer | Internal  |  | |
|  |  |  |  |  |
| **DividendPayingTokenInterface** | Interface | | |
|  | dividendOf | External ! | | NO! |
|  | withdrawDividend | External ! |  | NO! |
|  |  |  |  |  |
| **DividendPayingTokenOptionalInterface** | Interface | | |
|  | withdrawableDividendOf | External ! | | NO! |
|  | withdrawnDividendOf | External ! | | NO! |
|  | accumulativeDividendOf | External ! | | NO! |
|  |  |  |  |  |
| **DividendPayingToken** | Implementation | ERC20, Ownable, DividendPayingTokenInterface,
DividendPayingTokenOptionalInterface | | |
|  | <Constructor> | Public ! |  | ERC20 |
|  | distributeDividends | Public ! |  | onlyOwner |
|  | withdrawDividend | Public ! |  | NO! |
|  | _withdrawDividendOfUser | Internal  |  | |
|  | dividendOf | Public ! | | NO! |
|  | withdrawableDividendOf | Public ! | | NO! |
|  | withdrawnDividendOf | Public ! | | NO! |
|  | accumulativeDividendOf | Public ! | | NO! |
|  | _transfer | Internal  |  | |
|  | _mint | Internal  |  | |
|  | _burn | Internal  |  | |
|  | _setBalance | Internal  |  | |
|  |  |  |  |  |

```

# CONTRACT ASSESMENT

```





| **DividendTracker** | Implementation | Ownable, DividendPayingToken | || | |
| | | <Constructor> | Public | ! |  | DividendPayingToken |
| | | _transfer | Internal |  | | |
| | | withdrawDividend | Public | ! | | NO! |
| | | updateMinimumTokenBalanceForDividends | External | ! |  | onlyOwner |
| | | excludeFromDividends | External | ! |  | onlyOwner |
| | | updateClaimWait | External | ! |  | onlyOwner |
| | | setLastProcessedIndex | External | ! |  | onlyOwner |
| | | getLastProcessedIndex | External | ! | | NO! |
| | | getNumberOfTokenHolders | External | ! | | NO! |
| | | getAccount | Public | ! | | NO! |
| | | getAccountAtIndex | Public | ! | | NO! |
| | | canAutoClaim | Private |  | | |
| | | setBalance | External | ! |  | onlyOwner |
| | | process | Public | ! |  | NO! |
| | | processAccount | Public | ! |  | onlyOwner |
| | | |
| **MAI** | Implementation | ERC20, Ownable | |||
| | | <Constructor> | Public | ! |  | ERC20 |
| | | <Receive Ether> | External | ! |  | NO! |
| | | claimStuckTokens | External | ! |  | onlyOwner |
| | | isContract | Internal |  | | |
| | | sendBNB | Internal |  |  | |
| | | _setAutomatedMarketMakerPair | Private |  |  | |
| | | excludeFromFees | External | ! |  | onlyOwner |
| | | isExcludedFromFees | Public | ! | | NO! |
| | | changeTreasuryWallet | External | ! |  | onlyOwner |
| | | _transfer | Internal |  |  | |
| | | swapAndSendDividends | Private |  |  | |
| | | setSwapTokensAtAmount | External | ! |  | onlyOwner |
| | | updateGasForProcessing | Public | ! |  | onlyOwner |
| | | updateMinimumBalanceForDividends | External | ! |  | onlyOwner |
| | | updateClaimWait | External | ! |  | onlyOwner |
| | | getClaimWait | External | ! | | NO! |
| | | getTotalDividendsDistributed | External | ! | | NO! |
| | | withdrawableDividendOf | Public | ! | | NO! |
| | | dividendTokenBalanceOf | Public | ! | | NO! |
| | | totalRewardsEarned | Public | ! | | NO! |
| | | excludeFromDividends | External | ! |  | onlyOwner |
| | | getAccountDividendsInfo | External | ! | | NO! |
| | | getAccountDividendsInfoAtIndex | External | ! | | NO! |

```




# CONTRACT ASSESMENT


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<sup>L</sup>	processDividendTracker	External !		NO !
<sup>L</sup>	claim	External !		NO !
<sup>L</sup>	claimAddress	External !		onlyOwner
<sup>L</sup>	getLastProcessedIndex	External !		NO !
<sup>L</sup>	setLastProcessedIndex	External !		onlyOwner
<sup>L</sup>	getNumberOfDividendTokenHolders	External !		NO !

| Symbol | Meaning |

| :-----: |-----|

|  | Function can modify state |

|  | Function is payable |





# STATIC ANALYSIS

```
Context_msgData() (contracts/TestToken.sol#26-28) is never used and should be removed
DividendPayingToken.transfer(address,address,uint256) (contracts/TestToken.sol#890-905) is never used and should be removed
IterableMapping.get(IterableMapping.Map,address) (contracts/TestToken.sol#195-197) is never used and should be removed
SafeMath.div(uint256,uint256) (contracts/TestToken.sol#105-107) is never used and should be removed
SafeMath.div(uint256,uint256,string) (contracts/TestToken.sol#109-119) is never used and should be removed
SafeMath.mod(uint256,uint256) (contracts/TestToken.sol#121-123) is never used and should be removed
SafeMath.mod(uint256,uint256,string) (contracts/TestToken.sol#125-132) is never used and should be removed
SafeMathInt.abs(int256) (contracts/TestToken.sol#168-171) is never used and should be removed
SafeMathInt.div(int256,int256) (contracts/TestToken.sol#148-154) is never used and should be removed
SafeMathInt.mul(int256,int256) (contracts/TestToken.sol#139-146) is never used and should be removed
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#dead-code

Pragma version0.8.17 (contracts/TestToken.sol#19) necessitates a version too recent to be trusted. Consider deploying with 0.6.12/0.7.6/0.8.16
solc-0.8.17 is not recommended for deployment
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#incorrect-versions-of-solidity

Low level call in MAI.sendBNB(address,uint256) (contracts/TestToken.sol#1326-1337):
- (success) = recipient.call(value: amount)() (contracts/TestToken.sol#1332)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#low-level-calls

Function IUniswapV2Pair.DOMAIN_SEPARATOR() (contracts/TestToken.sol#311) is not in mixedCase
Function IUniswapV2Pair.PERMIT_TYPEHASH() (contracts/TestToken.sol#313) is not in mixedCase
Function IUniswapV2Pair.MINIMAL_LIQUIDITY() (contracts/TestToken.sol#344) is not in mixedCase
Function IUniswapV2Router01.WETH() (contracts/TestToken.sol#384) is not in mixedCase
Parameter DividendPayingToken.withdrawDividendOf(address).owner (contracts/TestToken.sol#863) is not in mixedCase
Parameter DividendPayingToken.withdrawDividendOf(address).owner (contracts/TestToken.sol#868) is not in mixedCase
Parameter DividendPayingToken.withdrawDividendOf(address).owner (contracts/TestToken.sol#874) is not in mixedCase
Parameter DividendPayingToken.accumulativeDividendOf(address).owner (contracts/TestToken.sol#880) is not in mixedCase
Constant DividendPayingToken.magnitude (contracts/TestToken.sol#883) is not in UPPER_CASE_WITH_UNDERSCORES
Parameter DividendTracker.updateMinimumTokenBalanceForDividends(uint256).newMinimumBalance (contracts/TestToken.sol#979) is not in mixedCase
Parameter DividendTracker.getAccount(address).account (contracts/TestToken.sol#1024) is not in mixedCase
Parameter MAI.changeTreasuryWallet(address).treasuryWallet (contracts/TestToken.sol#1370) is not in mixedCase
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#conformance-to-solidity-naming-conventions

Variable IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountADesired (contracts/TestToken.sol#389) is too similar to IUniswapV2Router01.addLiquidity(address,address,uint256,uint256,uint256,uint256,address,uint256).amountBDesired (contracts/TestToken.sol#390)
Variable DividendPayingToken.withdrawDividendOfUser(address)._withdrawableDividend (contracts/TestToken.sol#840) is too similar to DividendTracker.getAccount(address).withdrawableDividends (contracts/TestToken.sol#1032)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#variable-names-too-similar

SafeMathInt.MAX_INT256 (contracts/TestToken.sol#137) is never used in SafeMathInt (contracts/TestToken.sol#135-177)
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#unused-state-variable

MAI.dividendTracker (contracts/TestToken.sol#1224) should be immutable
MAI.liquidityFeeOnBuy (contracts/TestToken.sol#1199) should be immutable
MAI.liquidityFeeOnSell (contracts/TestToken.sol#1205) should be immutable
MAI.rewardsFeeOnBuy (contracts/TestToken.sol#1201) should be immutable
MAI.rewardsFeeOnSell (contracts/TestToken.sol#1207) should be immutable
MAI.totalBuyFee (contracts/TestToken.sol#1203) should be immutable
MAI.totalSellFee (contracts/TestToken.sol#1209) should be immutable
MAI.treasuryFeeOnBuy (contracts/TestToken.sol#1200) should be immutable
MAI.treasuryFeeOnSell (contracts/TestToken.sol#1206) should be immutable
MAI.uniswapV2Pair (contracts/TestToken.sol#1214) should be immutable
MAI.uniswapV2Router (contracts/TestToken.sol#1213) should be immutable
Reference: https://github.com/crytic/slither/wiki/Detector-Documentation#state-variables-that-could-be-declared-immutable
```

**Result => A static analysis of contract's source code has been performed using slither,**

**No major issues were found in the output**



# FUNCTIONAL TESTING

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**Router (PCS V2):**

0xD99D1c33F9fC3444f8101754aBC46c52416550D1

**1- Adding Liquidity (Passed):**

**liquidity added on Pancakeswap V2:**

<https://testnet.bscscan.com/tx/0x1379e0311e1ae3ca5d349bf84d71e86ad72e5799dad927ec8c8d28754a63bb7b>

**no issue were found on adding liquidity.**

**2- Buying (treasury + rewards fee | 1% max )(Passed):**

<https://testnet.bscscan.com/tx/0x58943848c5c656936978f39034c7e326814055167eb0c893d5ee242b302e37cd>

**3- Selling (treasury fee | 1% max )(Passed):**

<https://testnet.bscscan.com/tx/0x9e7eeda12433ecd18bfa72178e30ef31996e235e560e5efb823be117e72a964e>

**4-Transferring (0% tax)(Passed):**

<https://testnet.bscscan.com/tx/0x1e8f572b7a6d9200fc149ab9c2baeb01f6e4db3ddd4f82ca3673387c91ffb532>

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# FUNCTIONAL TESTING

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**5-Rewards distributed (Passed):**

**BUSD token sent to holder as seen in this transactions**

<https://testnet.bscscan.com/tx/0x9e7eeda12433ecd18bfa72178e30ef31996e235e560e5efb823be117e72a964e>

<https://testnet.bscscan.com/tx/0x459734842c6ffc2714e238c654abfde3afe582615a9a6b8b46dad343a302998>

**6-Internal Swap(Passed):**

<https://testnet.bscscan.com/tx/0x9e7eeda12433ecd18bfa72178e30ef31996e235e560e5efb823be117e72a964e>

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# MANUAL TESTING

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**NO ISSUES FOUND**

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# Social Media Overview

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**Here are the Social Media Accounts of  
MatrixGPT**



**[https://t.me/MatrixGPT\\_ann](https://t.me/MatrixGPT_ann)**



**<https://twitter.com/MatrixGPT>**



**<https://matrixgpt.ai>**

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# ABOUT AUDITACE

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We specialize in providing thorough and reliable audits for Web3 projects. With a team of experienced professionals, we use cutting-edge technology and rigorous methodologies to evaluate the security and integrity of blockchain systems. We are committed to helping our clients ensure the safety and transparency of their digital assets and transactions.



**<https://auditace.tech/>**



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**[https://twitter.com/auditace\\_](https://twitter.com/auditace_)**



**<https://github.com/Audit-Ace>**

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