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# CRYPTO TRADING EXECUTION WITH FLASH LOANS, WEB3 AND HARDHAT

SHAUN McDONOGH



## INTRODUCTION



**BEFORE LEARNING  
FLASH LOANS**



**AFTER LEARNING  
FLASH LOANS**



# WHY SHARE THIS INFORMATION?

**HELLO!**  
My name is

**Irrelevant**



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IN THIS TOGETHER



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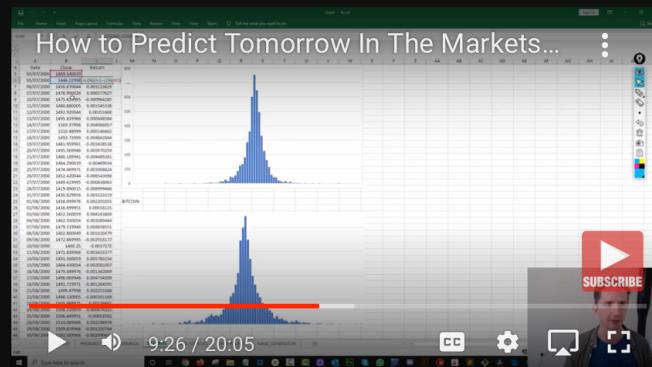
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How to Predict Tomorrow In The Markets - Foundation (Part 1)

4,784 views • 1 year ago

Would you like the ability to predict what tomorrow will do in the S&P 500, Bitcoin, Ethereum and so on? To be more specific, would you see value in being able to predict whether tomorrow's High will surpass today's?

How about a 77% probability calculation on whether tomorrow's close vs today's close will outperform... <https://cryptowizards.net>

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I'm Learning from THESE  
Traders in Apr 2022 ...



Solana Foundation Grant  
Application - Creating a Ne...



IPO Analysis - Edge Detection  
126 views • 1 month ago



IPO Analysis - First Finding  
(Nothing Major Here...)



How Much Money Does This  
Channel Make?

# Triangular Arbitrage for Crypto with Python - (Fast Track)

Write your own algorithm to calculate Triangular Arbitrage with depth on Centralised and Decentralised exchanges.

Bestseller **4.8 ★★★★☆** (147 ratings) 700 students

Created by [Shaun McDonogh](#)

Last updated 01/2022 English English [Auto]

## What you'll learn

- ✓ Gain a deep understanding of Arbitrage with particular focus on Triangular Arbitrage
- ✓ Develop with Javascript the "indie programmer" and fun way for complete beginners
- ✓ Calculate surface rate opportunities across all pairs
- ✓ Cover the above points in both CeFi (with the Poloniex exchange) and Defi (with Uniswap V3)
- ✓ Read blockchain price information with Web3 and Ethers JS
- ✓ Understand Triangular Arbitrage concepts with Python from an "indie programmer" and fun way for complete beginners
- ✓ Establish all traceable Triangular Arbitrage pairs unseen by others
- ✓ Calculate real rates for arbitrage with depth
- ✓ Pull any data from the web by exploring the Rest API endpoints with Poloniex (transferable knowledge to other exchanges)
- ✓ Work with the Uniswap V3 SDK

## Requirements

LS

Ludovico S.

2 weeks ago

Super instructor, i really liked the way he explained things. Very interesting and useful the section on Defi which turned out to be also a small crash course on how to read data from blockchain and how to use properly etherscan and the other tools.

Wish you'll make new courses.

[Show more](#) ▾

Was this review helpful?



[Report](#)

FS

Felix S.

3 weeks ago

Excellent course. Couldn't find any other source out there with such a clear up-to-date explanation of uniswap V3

Was this review helpful?



[Report](#)

KS

Kenneth S.

3 months ago

Exceptional course material. Shaun showed a command of the material and presented it with enthusiasm which made the course enjoyable. Very highly recommend this course if one is interested in learning how to approach finding these opportunities for themselves.

Was this review helpful?



[Report](#)

CJ

Conrad Reuben J.

3 months ago

Very comprehensive. He teaches well. It gets a bit heavy so I would advise you to take your time and go through the code step by step especially if you're a newbie like me .

Was this review helpful?

(Surface Rate %)

Contract 1	Contract 2	Contract 3	
BUSD 1.00000000	WBNB 0.00259948	SPACE 10425.48945269	-35.17 %
WBNB 0.00259948	SPACE 10425.48945269	BUSD 1.04043013	T1      0.00259336
Swap Rate 0.00259948	Swap Rate 4010606.31201822	Swap Rate 0.00009980	T2      6823.29326311
			T3      0.64833251
			1  Real Rate

**4.13**

(Surface Rate %)

Contract 1	Contract 2	Contract 3	
BUSD 1.00000000	WBNB 0.00259949	EGG 14.30123343	2.28 %
WBNB 0.00259949	EGG 14.30123343	BUSD 1.04132186	T1      0.00259336
Swap Rate 0.00259949	Swap Rate 5501.54709134	Swap Rate 0.07281343	T2      14.15258827
			T3      1.02279940
			1  Real Rate

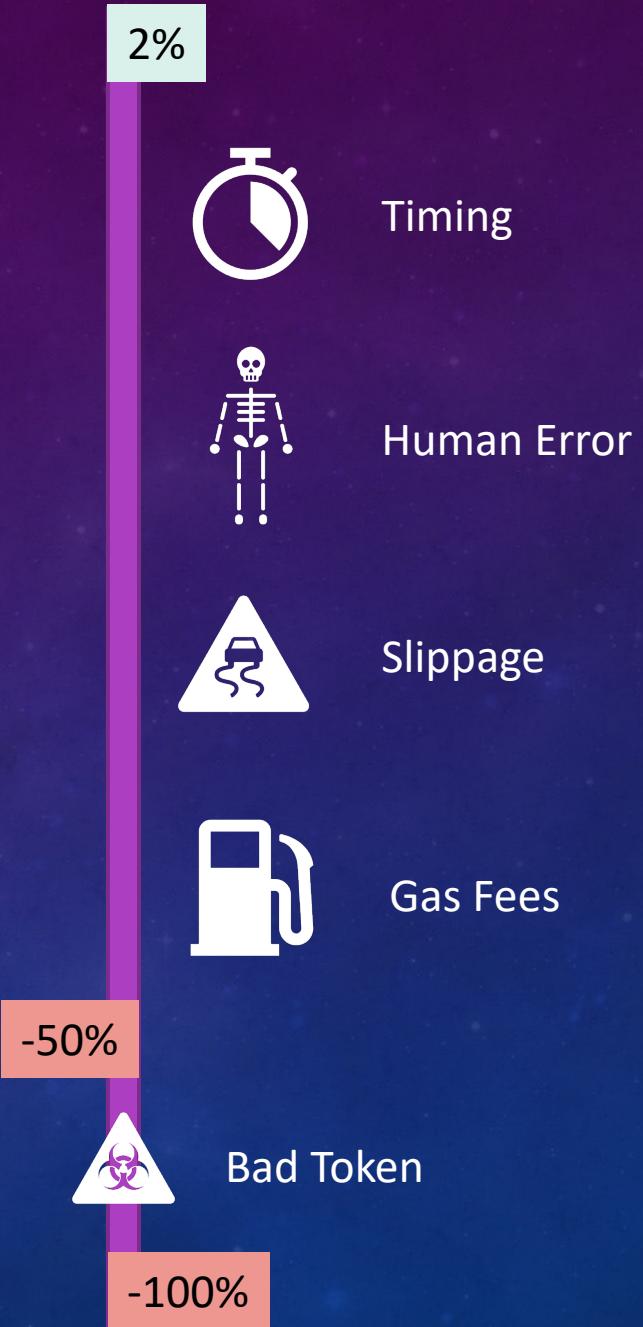
**4.66**

(Surface Rate %)

Contract 1	Contract 2	Contract 3	
CROX 1.00000000	Cake 0.00249108	USDT 0.01878926	3.85 %
Cake 0.00249108	USDT 0.01878926	CROX 1.04658139	T1      0.00248473
Swap Rate 0.00249108	Swap Rate 7.54262664	Swap Rate 55.70104079	T2      0.01869421
			T3      1.03846865
			1  Real Rate



## SO WHATS THE PROBLEM?





## THE FLASH LOAN



# WHAT PROGRAMMING EXPERIENCE DO I NEED?

**JS**





## WHY WILL YOU SUCCEED



PRINCIPLE BASED  
LEARNING



SANITY CHECKING



PERSISTENCE

# COURSE OVERVIEW

INTRODUCTION

INTUITION

GETTING SET UP

SOLIDITY MINI CRASH COURSE

READING BLOCKCHAIN DATA

WRITING BLOCKCHAIN DATA

HARDHAT AND TOKEN SWAP

PYTHON EXECUTION

FLASHLOAN – TRIANGULAR ARBITRAGE

FLASHLOAN – UNISWAP EXCHANGE ARB

INTUITION

INTUITION  
ARBITRAGE



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# WHAT IS STANDARD ARBITRAGE?



Shop A



Shop B



# VANILLA ARBITRAGE



Shop A



+ 20% Gain



Shop B





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Additional  
X6 Apples

+ 60%

Shop A  
Apple / Orange



Trade 3  
0.5

Shop A  
Orange / Banana

Trade 1

10 Apples x 1.2 = 12 Bananas

Trade 2

12 Bananas x (1 / 1.5) = 8 Oranges

Trade 3

8 Oranges x (1 / 0.5) = 16 Apples

BASIC TRIANGULAR ARBITRAGE  
EXAMPLE

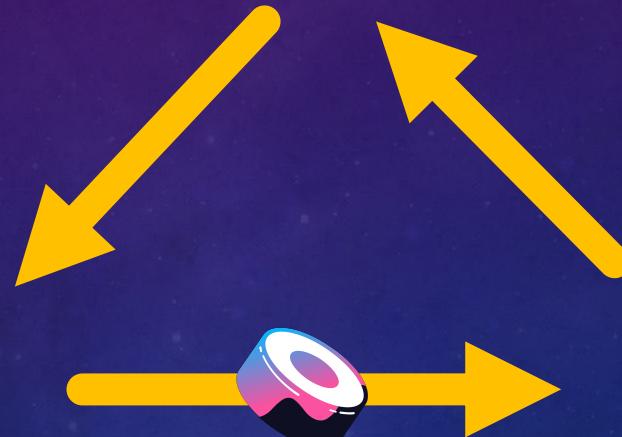


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# UNISWAP



# UNISWAP



# Sushi

INTUITION

INTUITION  
**FLASH LOANS**



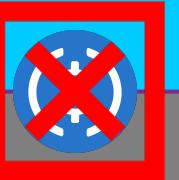
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Repay \$1M + 0.03 %



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