

# Impact and User Perception of Sandwich Attacks in the DeFi Ecosystem

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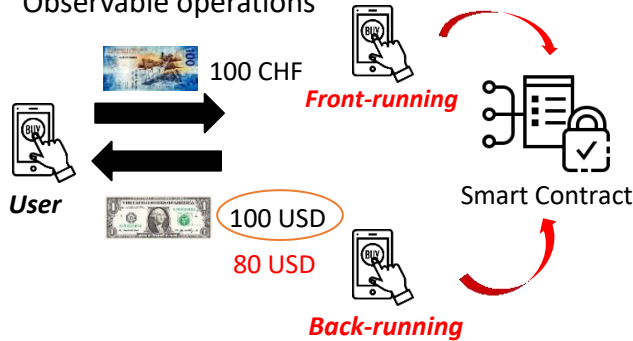
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## Introduction

### Blockchain features lead to Sandwich Attacks in Decentralized Finance (DeFi):

- Non-instantaneous execution
- Tips-paid-based ordering
- Observable operations



**Sandwich Attack** causes user losses by maliciously inserting transactions to exploit price discrepancies.

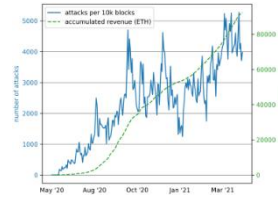
But the **Real World Impact** and the **User's Perceptions** of Sandwich Attacks are **unclear**.

## Key Takeaways

- Unregulated DeFi markets
- User information asymmetries
- Collaborations between users
- Needs for users security education

## Quantitative Findings: the Impact of Sandwich Attacks

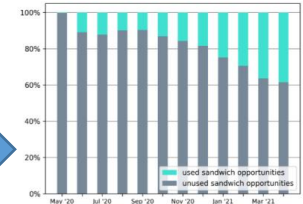
Data: Transaction receipts on the Uniswap from May 2020 to April 2021



### Sandwich Attacks Over Time

Financial loss exceeds 90,000 ETH

**Unused Opportunities of Sandwich Attacks**  
the probability of being attacked has increased from 10% to 40% rapidly



## Interview Findings: the User's Perceptions of Sandwich Attacks

Interviewee: DeFi insider users (n = 5) and non-professional DeFi users (n = 10)

### Knowledge of Sandwich Attacks

- Challenging for knowing being attacked
- Unaware of revenue-related losses
- Hardly notice the global impact

### Attitude of Sandwich Attacks



#### For Individual:

- Lessons to notice the security issues
- Inconspicuous of sandwich attacks

#### For Community:

- Motivate the community to develop better products

### Mitigation of Sandwich Attacks

- Improve users' awareness of the severity of the problem
- Detect real-time attacks before the victim transaction's execution
- Automated trading tool for mitigation strategies
- Support trades for various markets