



COLLEGE of ENGINEERING AND PHYSICAL SCIENCES

SCHOOL OF COMPUTER SCIENCE

PhD Seminar 1

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Understanding Flash-Loan-based Wash Trading

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Abstract:

Flash loan, a popular lending service in the decentralized finance (DeFi) ecosystem, allows users to borrow a large amount of virtual assets without any collateral. It can be leveraged to support many financial activities (such as arbitrage, collateral swap, self-liquidation, etc.), but unfortunately is often abused for malicious intent. One example of abusing flash loan servicing is to simultaneously sell and buy the same cryptocurrency to mislead the market, aka wash trading. It can manipulate cryptocurrency market at a very low cost, thereby dramatically affecting the stability and fairness of the market. More seriously, attackers can amplify the market impact by borrowing more assets as there is no loan size limitation for flash loan. Until now, there has been little attention paid to flash-Loan-based wash trading, but meanwhile, we have started to witness wash trading activities using flash loan. In this research, we analyze the properties of Flash-Loan-based wash trading in detail and propose a heuristic-based detection method. The real-world flash loan transaction data from the Ethereum is used to verify our proposed detection method and more than 6,000 illegal transactions were found. Based on the result, we analyze the relationship between illegal transactions and fluctuations in the price and volume of targeted assets. Finally, we evaluate cost difference between traditional wash trading and flash-loan-based wash trading to reveal the attackers' motivation.