Brno University of Technology
Faculty of Information Technology

Department of Intelligent Systems (DITS) Academic year 2021/2022

Bachelor's Thesis Specification

24226

Student: **Filip Marek**
Programme: Information Technology
Title: **Adaptive Trading Strategies for Cryptocurrencies**
Category: Modelling and Simulation

Assignment:

1. Study existing trading strategies for cryptocurrencies and other instruments, including rebalance and HODL. Analyze achieved results of the studied strategies and their assumptions.
2. Study existing simulation tools suitable for testing trading strategies.
3. Analyze the backlog of cryptocurrency trading data provided by the supervisor and summarize observed events.
4. Propose several (adaptive) trading strategies assuming the backlog.
5. Implement and evaluate proposed strategies vs. traditional approaches such as HODL and rebalance.
6. Discuss further improvements and limitations of the practical deployment.

Recommended literature:

- Bankless: "How to make money trading stablecoins", https://newsletter.banklesshq.com/p/how-to-make-money-trading-stablecoins
- HodlBlog: "When Does Portfolio Rebalancing Improve Returns?", https://www.hodlbot.io/blog/when-does-portfolio-rebalancing-improve-returns
- The Shrimpy Team: "What is Portfolio Rebalancing?", https://blog.shrimpy.io/blog/portfolio-rebalancing-for-cryptocurrency
- Holderlab.io: "Rebalancing Strategy For Your Crypto Portfolio", https://medium.com/coinmonks/rebalancing-strategy-for-your-crypto-portfolio-590397f2282b
- The Shrimpy Team: "Crypto Users who Diversify Perform Better", https://hackernoon.com/crypto-users-who-diversify-perform-better-new-research-ebf775d348dd
- The Shrimpy Team: "Portfolio Diversity: A Technical Analysis" https://hackernoon.com/portfolio-diversity-a-technical-analysis-c2c49f4d3a77

Requirements for the first semester:

- Items 1 to 3.

Detailed formal requirements can be found at https://www.fit.vut.cz/study/theses/

Supervisor: **Homoliak Ivan, Ing., Ph.D.**
Head of Department: Hanáček Petr, doc. Dr. Ing.
Beginning of work: November 1, 2021
Submission deadline: May 11, 2022
Approval date: November 3, 2021