

I. IDENTIFICATION DATA

Thesis name:	Control strategies for arbitration in cryptocurrencies
Author's name:	Sergey Tamarovskiy
Type of thesis :	master
Faculty/Institute:	Faculty of Mechanical Engineering (FME)
Department:	Department of Instrumentation and Control Engineering
Thesis reviewer:	Ing. Cyril Oswald, Ph.D.
Reviewer's department:	Department of Instrumentation and Control Engineering

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	ordinarily challenging
<i>Evaluation of thesis difficulty of assignment.</i>	
I evaluate the assignment as ordinarily challenging.	

Satisfaction of assignment	fulfilled with minor objections
<i>Assess that handed thesis meets assignment. Present points of assignment that fell short or were extended. Try to assess importance, impact or cause of each shortcoming.</i>	
The student fulfills the assignment in all points. However, I consider his conclusions at the point "To verify whether a system, that makes arbitrage trading's, can profitably exist or not" not entirely adequate.	

Method of conception	correct
<i>Assess that student has chosen correct approach or solution methods.</i>	
All used methods, approaches and technologies are correct.	

Technical level	B - very good.
<i>Assess level of thesis specialty, use of knowledge gained by study and by expert literature, use of sources and data gained by experience.</i>	
The technical level is good, the student had to use many modern technologies to solve the thesis assignment. However, the student mentioned a time for transaction and exchange fees as very important for arbitrage trading's profitability, but these factors are not properly examined.	

Formal and language level, scope of thesis	C - good.
<i>Assess correctness of usage of formal notation. Assess typographical and language arrangement of thesis.</i>	
The language level is good, but the thesis contains many typos. The thesis structure is confusing. The student constantly alternates between the theoretical and practical part in the thesis.	

Selection of sources, citation correctness	C - good.
<i>Present your opinion to student's activity when obtaining and using study materials for thesis creation. Characterize selection of sources. Assess that student used all relevant sources. Verify that all used elements are correctly distinguished from own results and thoughts. Assess that citation ethics has not been breached and that all bibliographic citations are complete and in accordance with citation convention and standards.</i>	
The selection of sources is appropriate. Many of citations are taken from online sources but there are not any timestamps when the sources were available included in references. Lot of images looks as taken over from or inspired by external sources without any citation in caption.	

Additional commentary and evaluation
<i>Present your opinion to achieved primary goals of thesis, e.g. level of theoretical results, level and functionality of technical or software conception, publication performance, experimental dexterity etc.</i>

III. OVERALL EVALUATION, QUESTIONS FOR DEFENSE, CLASSIFICATION SUGGESTION

The student fulfilled the assignment in all points. The conclusion at the point "To verify whether a system, that makes arbitrage trading's, can profitably exist or not" didn't take a time that is necessary for transaction or current exchange fees in account. There is no any experiment that shows how long the opportunities for arbitrage trading is valid in this thesis.

The student demonstrated that he is able to use modern web technologies for collect the interesting data from the Internet, evaluate them and visualize the results to user.

The thesis structure is a little bit confusing when the theoretical and practical parts are mixed.

The citations of external sources are not entirely consistent with standards.

I evaluate handed thesis with classification grade C, if the student answers the following questions arising from his work.

- 1. The collected data about the current exchange rates are saved in the text format. Which precision you used for the conversion from float type to string and how important that precision is?*
- 2. What is the latency of exchangers public API, and if you take the latency of your script in the account, what is the minimal lifetime of the opportunity for arbitrage trading?*
- 3. You protect the private web GUI by passwords which you save to your database in raw form. Is this the correct way and is it ethical to your users?*
- 4. In future, if you develop some fruitful system for automatic arbitrage trading's, how likely is that the instances of your software will compete with each other. In other words, if you trade when there is the opportunity for the arbitrage trading, do you shorten the lifetime of that opportunity?*

I evaluate handed thesis with classification grade **C - good**.

Date: **20.6.2019**

Signature: