



## THESIS ASSIGNMENT

**Name and Surname:** Bc. Michal Petrucha  
**Study programme:** Computer Science (Single degree study, master II. deg., full time form)  
**Field of Study:** 9.2.1. Computer Science, Informatics  
**Type of Thesis:** Diploma Thesis  
**Language of Thesis:** English

**Title:** Selected topics from advice complexity

**Aim:** This thesis has two main goals. The first goal is to create a comprehensive overview of the recent results in the field of advice complexity, with a focus on patterns in those results. The second goal is a theoretical analysis of selected online optimization problems from the point of view of advice complexity. Possible results include determining lower and upper bounds on the amount of advice necessary to solve an instance optimally and analyzing the trade-off between the amount of advice available and the competitive ratio we can guarantee. Optionally, it is also possible to consider randomized online algorithms and/or analyze advice complexity for problems that are only partially online.

**Supervisor:** RNDr. Michal Forišek, PhD.  
**Department:** FMFI.KI - Department of Computer Science  
**Head of department:** doc. RNDr. Daniel Olejár, PhD.

**Assigned:** 28.11.2012

**Approved:** 28.11.2012                      prof. RNDr. Branislav Rován, PhD.  
Guarantor of Study Programme

.....  
Student

.....  
Supervisor