

Report on Master Thesis

Institute of Economic Studies, Faculty of Social Sciences, Charles University in Prague

Student:	Jan Hubík
Advisor:	RNDr. Michal Červinka, Ph.D.
Title of the thesis:	Player Skill Rating for Games with Random Matchmaking

OVERALL ASSESSMENT (provided in English, Czech, or Slovak):

The thesis submitted by Jan Hubík is a well structured, high-level work on the frontier of theoretical economics and statistics. The author deals with the topic of evaluating player's skills in games similarly as well known and established ratings such as e.g. Elo in chess, but he is concerned with online gaming. The thesis uses an example of online multiplayer games where individual players form teams to compete against each other. In such games teams are often assembled just before the game itself by a special sort of mechanism. Jan develops a new framework for rating of player's skill in games without skill based handicaps which means that assembling mechanisms in such games do not form ex ante balanced teams. Such games are then played at so called random matchmaking conditions.

Moreover, teams in online games are often assembled for the purposes of one-time use only and it is therefore very difficult to rate individual players and their skills. By converting an aggregate data about the player's performance to a percentile rank describing his skill the author develops rating system based on the solid statistical grounds. Suitable for both single and multi-player games with binary and also non-binary endings makes it a very general tool that can be used in various types of games. Jan also provides a statistical simulations on a real game data that proves his system is relatively easy to use. Moreover, possible applications of the rating system such as reputation systems in an online marketplaces or business simulations for human resources management are introduced and discussed.

According to my knowledge this thesis is an exceptional piece of work. It proves that the author can manage a highly-theoretical research topic, formal correctness of the thesis and also make contribution to the most recent topic. I am very well convinced that this thesis is based on the knowledge highly exceeding IES standard, the research effort behind the text strongly surpasses the master level at our institute. I especially appraise the originality of the statistical topic as exceptional.

I am pleased to summarize that the author managed all aspects of the master thesis well and therefore, based on the quality of the entire thesis, I can honestly suggest the highest grade ("1". i.e. "excellent").

Summary: I am very pleased I can strongly recommend the thesis of Jan Hubík to defense at the IES FSV UK. I suggest the grade "1". i.e. "excellent."

SUMMARY OF POINTS AWARDED (for details, see below):

CATEGORY	POINTS
Literature (max. 20 points)	18
Methods (max. 30 points)	30
Contribution (max. 30 points)	28
Manuscript Form (max. 20 points)	20
TOTAL POINTS (max. 100 points)	96
GRADE (1 – 2 – 3 – 4)	1

NAME OF THE REFEREE: Jindřich Matoušek

DATE OF EVALUATION: September 3, 2016


Referee Signature

EXPLANATION OF CATEGORIES AND SCALE:

LITERATURE REVIEW: *The thesis demonstrates author's full understanding and command of recent literature. The author quotes relevant literature in a proper way.*

Strong Average Weak
20 10 0

METHODS: *The tools used are relevant to the research question being investigated, and adequate to the author's level of studies. The thesis topic is comprehensively analyzed.*

Strong Average Weak
30 15 0

CONTRIBUTION: *The author presents original ideas on the topic demonstrating critical thinking and ability to draw conclusions based on the knowledge of relevant theory and empirics. There is a distinct value added of the thesis.*

Strong Average Weak
30 15 0

MANUSCRIPT FORM: *The thesis is well structured. The student uses appropriate language and style, including academic format for graphs and tables. The text effectively refers to graphs and tables and disposes with a complete bibliography.*

Strong Average Weak
20 10 0

Overall grading:

TOTAL POINTS	GRADE		
81 – 100	1	= excellent	= výborně
61 – 80	2	= good	= velmi dobře
41 – 60	3	= satisfactory	= dobře
0 – 40	4	= fail	= nedoporučuji k obhajobě