FACULTY
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Assignment of master's thesis

Title:	Football outcomes prediction with tensor completion embeddings
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Study program:	Informatics
Branch / specialization:	Knowledge Engineering
Department:	Department of Applied Mathematics
Validity:	until the end of summer semester 2023/2024

Instructions

Football is the most popular sport in the world. For instance, FIFA (Fédération Internationale de Football Association) has more affiliated countries than the United Nations and the final of the world cup is the most live-watched sport event. However, predicting the results of football is considered a very challenging task. However, certain confrontations appear to have cyclical outcomes: for example, team A often defeats team B over time. Such behavior cannot be detected in most parts of the state-of-the-art football outcomes predictions since they focus on the current season. To consider cycle patterns among seasons, this thesis aim to perform tensor completion where the dimensions are home team, away team and season and use the tensor factorization embeddings for prediction. For that, the student must:
(1) perform a comprehensive revision of the literature on sports prediction learning methods;
(2) collect the data and process the available historical football datasets of at least four leagues;
then (3) design and implement a model based on tensor completion embedding that predicts the results of football matches based on historical information;
moreover, (4) implement and execute baselines based found on (1) and compare the accuracy prediction with the implemented model;
finally, (5) discuss the results and analyze possible future directions.

Electronically approved by Ing. Magda Friedjungová, Ph.D. on 25 December 2022 in Prague.