Title: Model-agnostic Explanations of Black-box Prediction Models using Rough Sets – the case of post-competition analytics at KnowledgePit.ai

Abstract:

In my talk, I will discuss the problem of model-agnostic explainability and analytics of predictions obtained using black-box machine learning models. As an example of an application, I will use a data science competition platform where researchers from around the world compete to solve real-life problems. I will aim to demonstrate how notions known from the theory of rough sets, such as the decision reducts, can be used to efficiently construct an approximation of an arbitrary set of predictions, such as a typical solution to a data science competition. I will also explain how such an approximation can be used to extract useful insights about the ML model used to generate the predictions, and about the corresponding dataset. Finally, I will explain how it is all related to the problem of post-competition analytics and diagnostics of solutions submitted by the most successful teams in data science competitions.

Bio:

Andrzej Janusz is an active and experienced researcher in fields related to data exploration, machine learning, and artificial intelligence. In 2014, he received PhD degree in Computer Science from the University of Warsaw in Poland, where he holds the position of Assistant Professor. He participated in R&D projects funded by EU and NCBR in Poland, related to topics such as monitoring of safety conditions in hazardous environments, video game data analytics, active learning, and explainable artificial intelligence. His professional career includes cooperation with various companies - currently, he serves as Senior Research Advisor at QED Software and Chief Data Scientist at QED Force. His publication record consists of over 70 articles on topics related to applications of machine learning techniques. He co-founded KnowledgePit.ai – an online platform where he is regularly organizing open data science competitions aiming at solving complex real-life problems.