

Abstract

How to Boost Efficiency of Traditional Machine Learning Pipeline Using Techniques and Tricks from Deep Learning

Over the recent decade, deep learning has become a dominant approach in data science. In general, neural networks tend to offer better performance over traditional methods. In addition to better accuracy, deep learning also allows researchers to skip a labor-intensive feature engineering phase. Still, many practitioners continue using traditional methods, mainly because neural networks lack explainability and because there is a large variety of well-researched old-school machine learning algorithms that have become industry standards for specific domains. And, of course, neural networks are expensive to train.

But is there a way to combine the best of two worlds? Is it possible to “steal” techniques from deep learning and employ them to increase efficiency of traditional machine learning models?

The answer is yes. Attend this presentation to learn how to enrich conventional methods (from linear regression to decision forests) by using the tools, originally created by AI-practitioners with neural networks in mind. This symbiotic approach often allows reaching state-of-the-art levels of prediction without leaving a realm of traditional, explainable and inexpensive methods.

This is an intermediate-level presentation. Participants are expected to be familiar with key machine learning concepts.

About the Speaker

Vlad Pavlov is a global high-tech executive who has served on CxO/Director positions for a wide range of companies from seed-stage startups to Intel and Microsoft, in the USA, Ukraine, Russia and Poland. His experience includes launching and/or managing market-leading products ranging from an FDA-approved clinical information system to a telco BSS software that was serving 600 M mobile subscribers worldwide . A frequent speaker at scientific and industrial conferences, he has authored major publications on computer science and software engineering (in 2006 was included into ACM Top-10 list). Vlad is a Senior IEEE member, founder and ex-Chairman of the Ukrainian ACM Chapter, Chair-Emeritus at CEE-SECR, top-ranked participant in data science competitions.