Report on learning practice # 2

Analysis of multivariate random variables

Performed by:

Grandilevskii Aleksei

J4133c

Dubinin Ivan

Sorokin Mikhail

J4132c

Saint-Petersburg

2020

**Table of contents:**

Dataset preparation:

Изображение выглядит как стол

Автоматически созданное описание

*Pic.1. Dataset preparation.*

In this lab, 12 dimensions will be considered, 1 target for predictive analysis, one dimension for categorization, and 10 predictor values.

**From Lab 1:** *“Our dataset is game statistics data from the League of Legends game for 2020 from rated games in the "master" rank. The dataset is built using Riot.API (open public API for various in-game parameters from online games from Riot Games). The dataset contains many statistical parameters of past matches, including damage done, in-game currency earned, data on victories and defeats, etc. More details can be found in the README.MD file in the datasets folder.”*

1. Plotting a non-parametric estimation of PDF in form of a histogram and kernel density function for MRV (or probability law in case of discrete MRV).

2. Estimation of multivariate mathematical expectation and variance.

3. Non-parametric estimation of conditional distributions, mathematical expectations and variances.

4. Estimation of pair correlation coefficients, confidence intervals for them and significance levels.

5. Task formulation for regression, multivariate correlation.

6. Regression model,multicollinearity and regularization (if needed).

7. Quality analysis.

**Sourcecode**