Machine Learning Psychology Research

Solo or Team?: Team
Personal or School?: School
Approximate date: November/December 2023

Description:

For this project, I worked with 4 other Machine Learning students to conduct research on a pre-existing dataset, focused on answering the following questions:

- What correlations exist between psychological scores and strength metrics in the dataset?
- Can we develop a model that accurately predicts grip strength based on personality traits such as fearfulness, anxiety, emotional dependence, and sentimentalism (as measured by the HEXACO personality model)?
- Will changing the grip strength to categorical data (via thresholds) significantly improve the predictive power of our model?
- Do any of the emotional personality traits, as measured by the HEXACO personality model, have any predictive value in regards to grip strength (and therefore to overall physical strength)?

In this project, we used a variety of Machine Learning techniques and algorithms to answer these scientific questions, namely EDA and standardization, Regression modeling, Classification modeling, and K-means clustering.

Post Project Perspective

I was the lead architect of the project, and I thoroughly enjoyed working with my teammates, designing the ins-and-outs of the project, and developing code to carry out our intended purpose. Our team worked together effectively, and each member played to their strong suit. We kept each other on the same page throughout every step, and by the end we were better connected and better friends than when we started.

Feel free to check out the research report, presentation, and python code via the "View Code" button on my portfolio site. It is also available on my Github page.