Data Exploration
Predicting Problematic Internet Use in Children
Utilizing Internet Usage Behavior Data & Physical Activity Data

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1 Introduction

The topic we chose is an ongoing Kaggle competition focusing on detecting problematic internet use (PIU) among children. The increasing use of the internet among children has been a growing topic of discussion in recent years, especially with social media and the unlimited content online that is fed to everyone. While the internet offers numerous benefits, excessive use has been linked to mental issues such as depression, anxiety, and social isolation. However, existing methods for identifying PIU at an early stage are often complex and require professions involvement. In contrast, physiological signals collected through wearable devices have become widely obtainable, offering an alternative for evaluating PIU. In this project, we will utilize the Child Mind Institute - Problematic Internet Use dataset to investigate the potential of predicting PIU using not only internet usage behavior data but also physical activity data.

2 Objective

Our main objective is to predict the Severity Impairment Index, which reflects a child's mental health, based on their internet use, physical activity, sleep patterns, and other related factors in the dataset. We first want to explore the data and dive into the distributions of the habits of these children. The next step is to develop a predictive model to infer the mental health of the children based on these behaviors.

3 Schedule

1. Week 1 (11/17-11/23): Data preprocessing, analysis and visualization

2. Week 2 (11/24-11/30): Implementation of a preliminary inference model to establish a baseline for prediction accuracy

3. Week 3 (12/1-12/7): Result analysis and refine the model to improve model performance

4. Week 4 (12/7-12/14): Finalize the project by summarizing results, wrapping up the outcomes and preparing the report

4 Data

Kaggle Dataset: Child Mind Institute - Problematic Internet Use