



ML-models Team 1

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Aims of the Project

- Identifying the key factors that contribute to student success.
- Finding methods for analyzing demographic information, socio-economic status, learning environments and other relevant data to uncover patterns or correlations.
- Developing a predictive model to accurately forecast student performances.
- Finding suggestions for educational policies and practices to enhance student outcomes based on the findings of this project.





Goals of ML-modelling Team

- Developing models with high accuracy
- Comparing of feature importances



Common Parameters

- Test Size (Not Validation): 0.3 (30%) of all Data
- Metric Formula (Numeric): MAE (minimize)
- Metric Formula (Categorical): Accuracy (maximize)

Note: Metric formula for numeric has been changed since the first meeting.





Results

XGBoost (Anastasiia Marchenko) => MAE: 2.77064

Random Forest (Yahaya Musa Kayode) => MAE: 2.7276

Dense (Umut Toygar Göz) => MAE: 2.6205

Dense + XGBoost (Umut Toygar Göz) => MAE: 2.5896

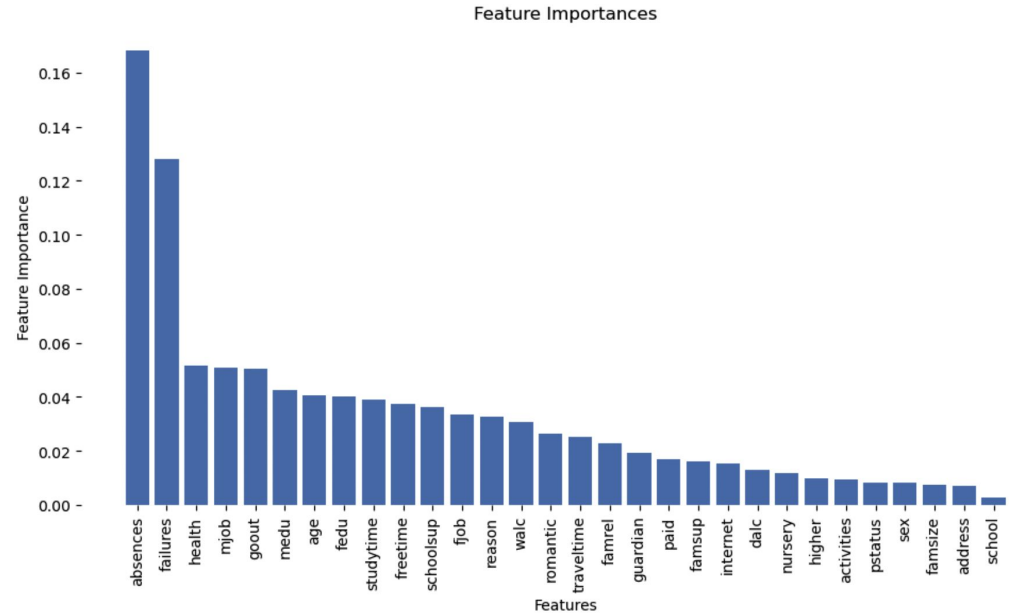
Naive Bayes (Hariharan Ayappane) => Accuracy: 0.71

KNN (Sarath Lonappan and Akash Raj) => Accuracy: 0.70

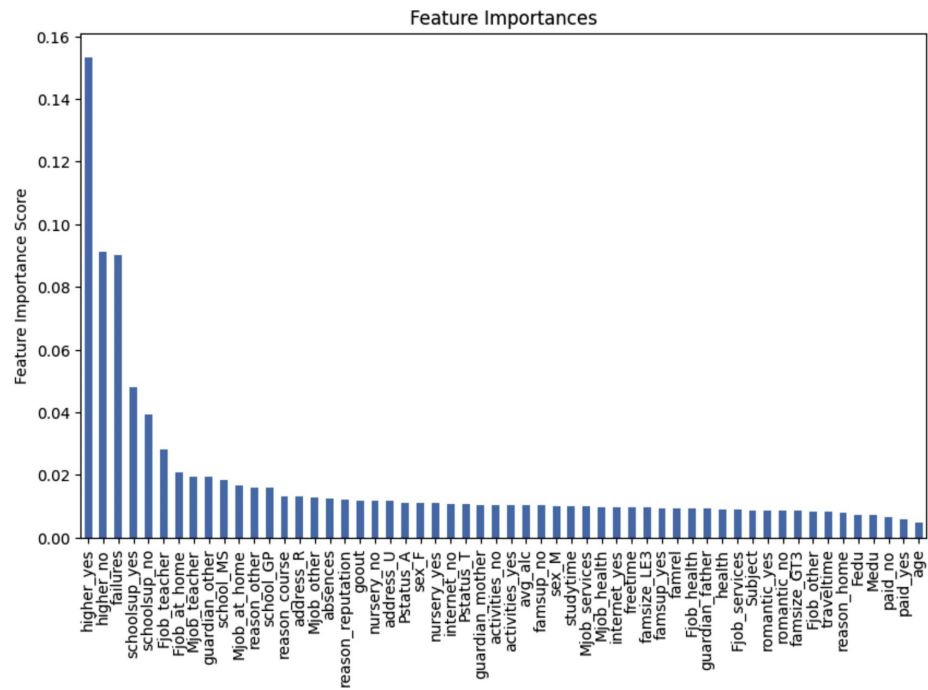
XGBoost on both mat and por (Yu Hang Ng) => MAE: 2.0



Feature Importances (Yahaya Musa Kayode)

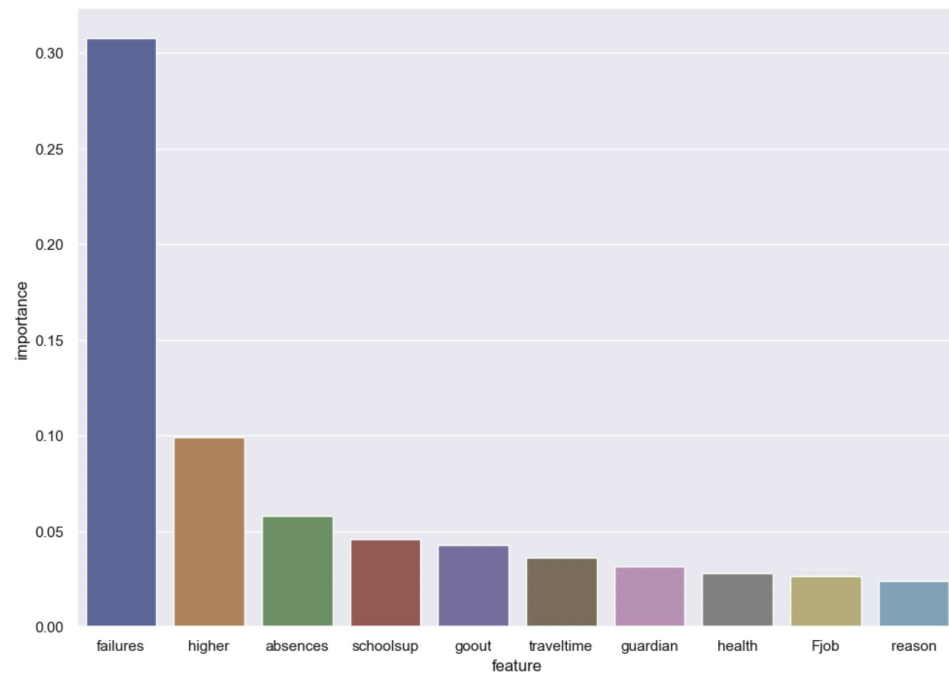


Feature Importances (Yu Hang Ng)





Feature Importances (Anastasiia Marchenko)





Suggestions for policies

The most important suggestion that we have is that the institutions should implement policies that remove any obstacles that prevent students from attending classes.

The importance of parents' teacher job, and the importance of whether student wants to pursue higher education may suggest the awareness of the importance of education in social mobility (Bourdieuian interpretation) having a strong effect on student outcomes. Institutions may implement policies to make students aware of the importance of education on achieving a more prosperous life.





Questions?

