Week 2

AI for Medical Prognosis

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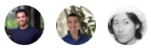
Prognosis with Tree-based models



Tune decision tree and random forest models to predict the risk of a disease. Evaluate the model performance using the c-index. Identify missing data and how it may alter the data distribution, then use imputation to fill in missing data, in order to improve model performance.

Less

Learning Objectives

- Identify missing data.
- Tune a decision tree's hyperparameters based on its c-index.
- Tune a random forest's hyperparameters based on its c-index.
- Use visual inspection to identify differences in distribution due to missing data.
- Use mean imputation and regression imputation to fill in missing data.
- Use Shapley Additive Explanations (SHAP) to quantify the importance of each feature to a random forest model's predictions.

Less

Tree-based models/

Video: Decision trees for prognosis 1 min Resume

Video: Decision trees 1 min

Video: Dividing the input space 2 min

Video: Building a decision tree 2 min

Video: How to fix overfitting 4 min

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