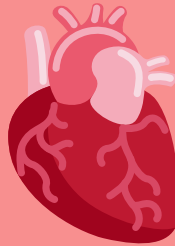# KHR - Heart

Karl-Magnus Laikoja
Hardo Post
Risto Voor

Predicting Heart disease and finding frequent symptoms

Background

- 918 patients
- 9 features related to heart condition + age and gender

Goals

- train model to find heart disease
- find most frequent feature values that occur with heart disease.

Methods and techniques used

Decision tree

KNN Random forest Oversampling One-hot encoding Frequent pattern mining Apriori Association rules

Heart disease prediction results

Model: Random Forest

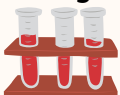Accuracy: 86.4%

False positive rate: 20.8%

False negative rate: 8%

Most frequent symptoms that patients with heart disease had
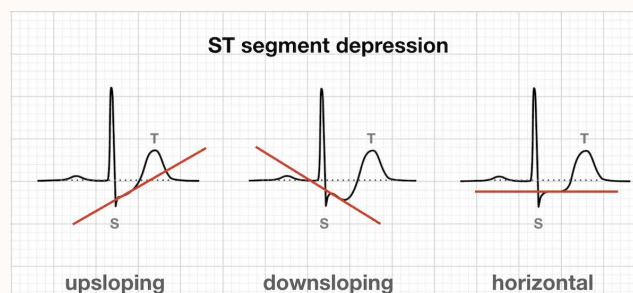
77% asymptomatic chest pain

67% blood sugar normal

EKG related

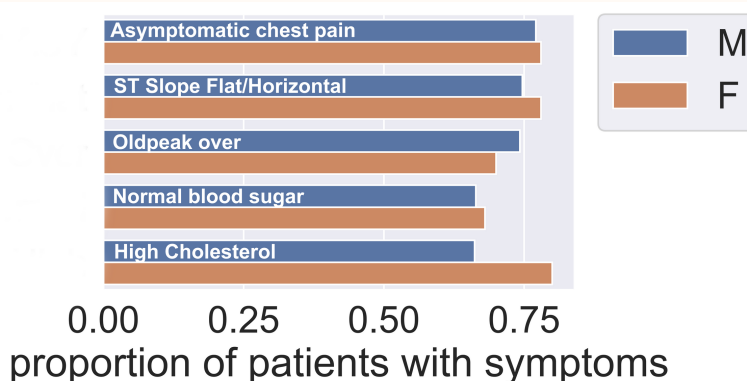75% ST Slope FLAT   73% oldpeak (ST depression)

ST segment depression

upsloping   downsloping   horizontal

68% High Cholesterol

Serum cholesterol mg/dl

Good < 200

Borderline 200 - 240

High > 240

5 most frequent symptoms Male vs Female

Asymptomatic chest pain
ST Slope Flat/Horizontal
Oldpeak over
Normal blood sugar
High Cholesterol

M
F

proportion of patients with symptoms

High Cholesterol Male vs Female by age

38-47
48-57
58-67

M
F

proportion of patients with symptoms