Case study 1
Task: Predict new superconductors
Key methods: Linear regression
Additional methods: Regularization techniques – L1/Lasso, L2/Ridge

Case study 2
Task: Predict patient readmission within 30 days
Key methods: Logistic regression
Additional methods: Feature engineering, specifically imputation of missing values

Case study 3
Task: Antispam email filter
Key methods: KNN (K-Nearest neighbors) classifier, Random Forest classifier
Additional methods: TFIDF (Term frequency, inverse document frequency), NLP (count vectorizer), multinomial Naïve Bayes, multilayer perceptron (MLP)

Case study 4
Task: Predict bankruptcy
Key methods: Logistic regression classification with L2 regularization, Random Forest classification, XGBoost
Additional methods: Randomized cv search
Evaluation methods: ROC curve (Receiver Operating Characteristic), confusion matrix, F1-score, stratified cross-validation

Case study 5
Task: Accept or reject firewall request
Key methods: SVM, SGD
Additional methods: Kernel tuning (linear, poly, RBF), regularization parameter tuning, Vowpal Wabbit (explored, not used in case study)

Case study 6
Task:
Key methods:
Additional methods:

Case study 7
Task:
Key methods:
Additional methods: