

Question 1.

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Question 1(f).

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RMS: 5.365212467343925e-14

Question 2.

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Question 2(a).

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Accuracy of the classifier on the small training set = 1.0

Accuracy of the classifier on the (full) test set = 0.1489

Question 2(b).

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maximum validation accuracy = 0.2507

training accuracy = 0.275

regularization parameter = 0.001953125

Question 2(d).

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maximum validation accuracy = 0.6938

training accuracy = 0.93

K = 8

Question 2(f).

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maximum validation accuracy = 0.8462

Training accuracy = 0.985

regularization parameter = 0.25

K = 18

Question 3.

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Question 3(b).

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validation accuracy of the base classifier : 0.2474

validation accuracy of the bagged classifier : 0.5764

Question 3(f).

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validation accuracy of the base classifier : 0.4019

validation accuracy of the bagged classifier : 0.838

Question 3(h).

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maximum bagged validation accuracy = 0.8475

Question 4(b).

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Training data score: -3536.424192018345

Test data score: -3732.2514702478575

Question 4(c).

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Training data score: -3.694742414774078

Test data score: -3.761070767846039

Question 4(d).

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Training data score: -3.594648773469382

Test data score: -3.729230200208489

Q4d-Q4c test scores = 0.03184056763754972

Question 4(e).

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Training data score: 3536.450268199036

Test data score: 3730.6655179668105

Q4e+Q4b test scores = -1.585952281046957

Question 4(f).

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Training data score: -3.7466090254900184

Test data score: -3.8131878041247167

Q4c-Q4f test scores = 0.05211703627867781

E.N.D