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Team name on Kaggle leaderboard: Aemon & Dare

For each of the sections below, your reported test accuracy should approximately match the accuracy reported on Kaggle.

Perceptron

Briefly describe the hyperparameter settings you tried. In particular, you should list the different values for learning rate and number of epochs you tried. You should also mention whether adding a learning rate decay helped and how you implemented this decay. Report the optimal hyperparameter setting you found in the table below. Report your training, validation, and testing accuracy with your optimal hyperparameter setting.

MUSHROOM DATASET

Optimal hyperparameters:	lr: 0.05 n_epochs:50
Training accuracy:	95.465737
Validation accuracy:	94.584615
Test accuracy:	94.892308

Fashion-MNIST DATASET

Optimal hyperparameters:	lr: 0.05 n_epochs: 100
Training accuracy:	84.462000
Validation accuracy:	79.850000
Test accuracy:	79.520000

SVM

Describe the hyperparameter tuning you tried for learning rate, number of epochs, and regularization constant. Report the optimal hyperparameter setting you found in the table below. Also report your training, validation, and testing accuracy with your optimal hyperparameter setting.

MUSHROOM DATASET

Optimal hyperparameters:	lr: 0.01; n_epochs: 100; reg_const: 0.125; batch_size: 1200
Training accuracy:	97.312269
Validation accuracy:	97.046154
Test accuracy:	96.984615

Fashion-MNIST DATASET

Optimal hyperparameters:	lr: 0.0000001; n_epochs: 100; reg_const = 0.125; batch_size: 1200
Training accuracy:	87.210000
Validation accuracy:	83.640000
Test accuracy:	82.750000

Softmax

Once again, describe the hyperparameter tuning you tried for learning rate, number of epochs, and regularization constant. Report the optimal hyperparameter setting you found in the table below. Also report your training, validation, and testing accuracy with your optimal hyperparameter setting.

MUSHROOM DATASET

Optimal hyperparameters:	lr: 0.25; n_epochs: 50; reg_const: 0.1; batch_size: 1200
Training accuracy:	87.771851
Validation accuracy:	87.876923
Test accuracy:	85.907692

Fashion-MNIST DATASET

Optimal hyperparameters:	lr: 0.005; n_epochs: 60; reg_const: 0.1; batch_size: 1200
Training accuracy:	85.448000
Validation accuracy:	83.150000
Test accuracy:	81.860000

Logistic

Once again, describe the hyperparameter tuning you tried for learning rate, number of epochs, and threshold. Report the optimal hyperparameter setting you found in the table below. Also report your training, validation, and testing accuracy with your optimal hyperparameter setting.

MUSHROOM DATASET

Optimal hyperparameters:	lr: 0.25; n_epochs: 100; threshold: 0.5
Training accuracy:	96.163316
Validation accuracy:	95.692308
Test accuracy:	95.446154