
PLA_15

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Initialization

```
TrainingData = dlmread('hw1_15_train.dat');
W = [0,0,0,0,0];
NumOfError = 0;
Existfault = 1;
```

PLA updating

```
while(Existfault)
for i=1:400
    % find a mistake
    if(misclassified(W,TrainingData(i,:)))
        % updating W(t+1) <- W(t) + y(t)x(t)
        W(1,1:4) = W(1,1:4) + TrainingData(i,1:4).*TrainingData(i,5);
        W(1,5) = W(1,5) + TrainingData(i,5);
        NumOfError = NumOfError + 1;
    end
end
% run next cycle until no mistake found
if(E_in(W,TrainingData)==0)
    Existfault = 0;
end
end
```

Result

```
fprintf('\n');
fprintf('Final W =');
disp(W);
fprintf('Total Num of error = %d \n\n',NumOfError);
```

Final W = 3.0841 -1.5831 2.3913 4.5288 -3.0000

Total Num of error = 45

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