

Data set:

10 categories from 10 large boards:

we-the-people-do-no-harm

speak-on-it-can-you-hear-me-now

random-awesomeness

bride

take-action

equal-opportunities-equality-diversity

awesome-rides

harlowe-pilgrims-superheroes

wildlife-animals

daily-finds

6013 training images, 758 validation images and
758 testing images

Results with imagenet classification model:

Classify the image with imagenet model, use the predict probability as inputs for Pinterest classification

Testing accuracy: 16.49%

Training accuracy: 16.43%

Results with text classification model:

Testing accuracy: 80.08%

Training accuracy: 90.1%

Naive Bayes classifier

Results of object detection:

Use existence probability of all objects as input features

Testing accuracy of SVM: 77.7%

Training accuracy of SVM: 79.22%

Testing accuracy of Naive Bayes: 63.4%

Training accuracy of Naive Bayes: 63.2%

Results of dedicated classification model:

A new model with imagenet network topology was trained

Testing accuracy: 72.43%

Training accuracy: 99.36%

Combination between text and detection model

The result of the two classifiers are combined with SVM, probability normalizing.

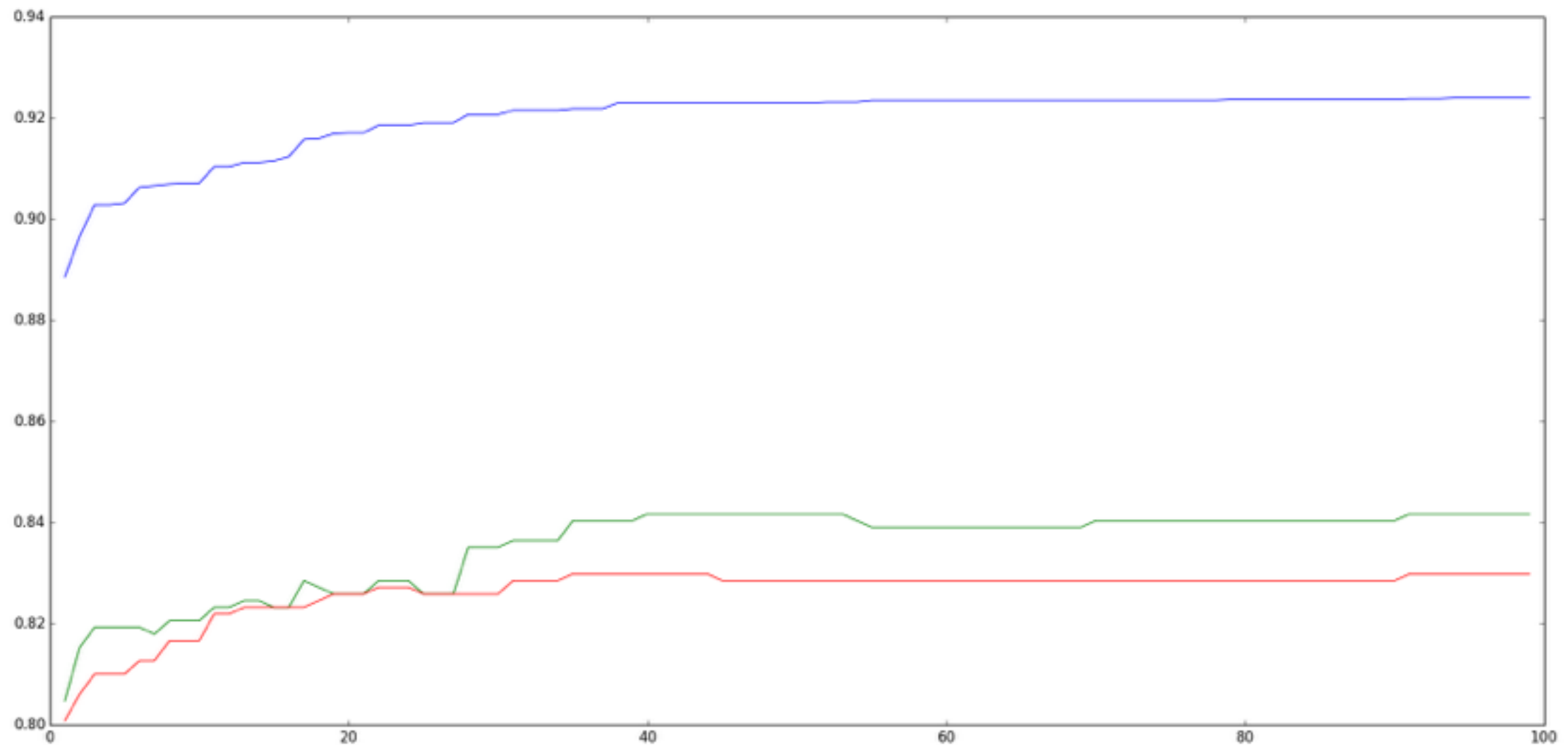
Best result of normalizing was:

alpha = 0.21, test accuracy = 87.46%,
train accuracy = 94.33%, val accuracy = 89.05%

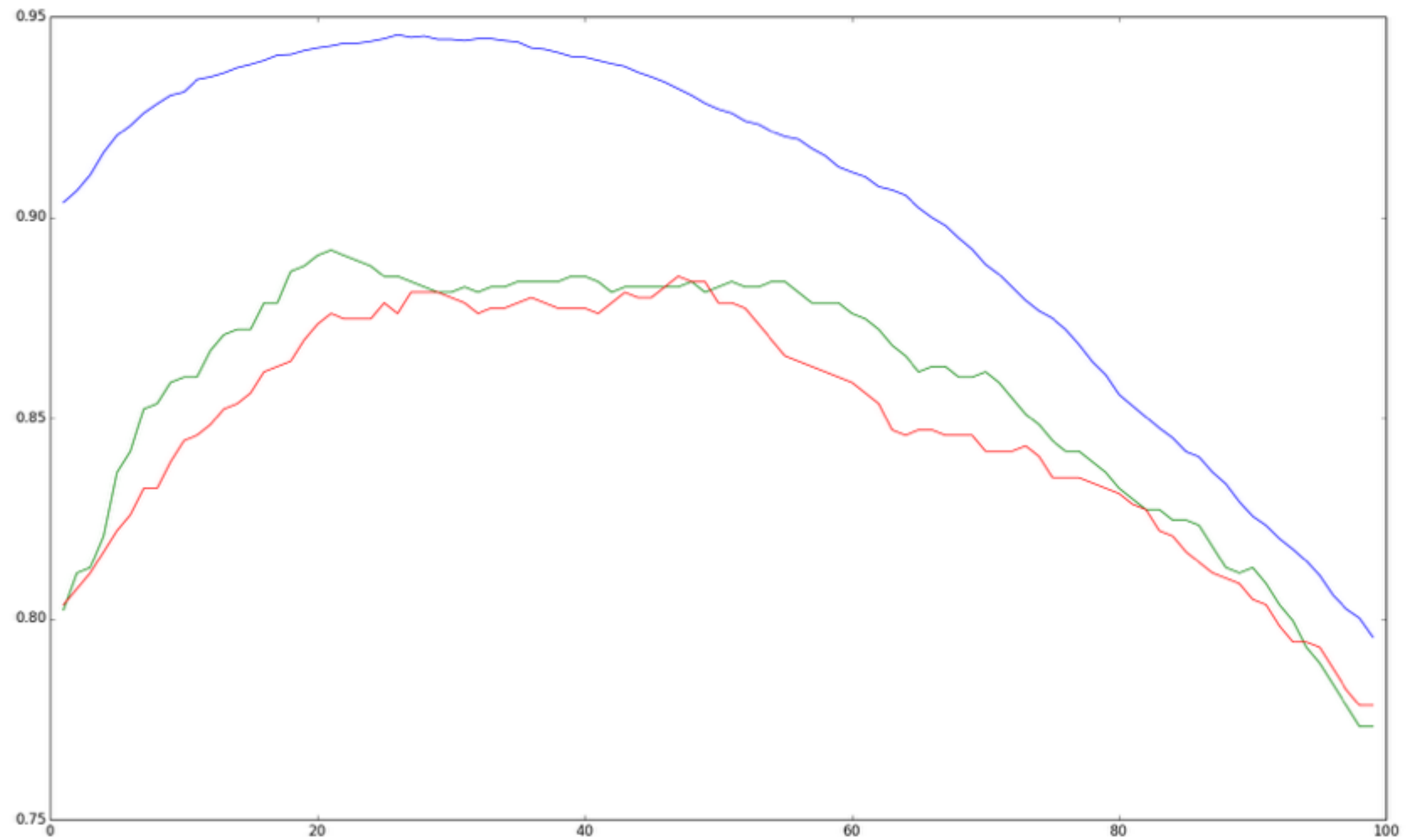
Best Result of SVM:

C = 0.42, test accuracy = 82.9%,
train accuracy = 92.3%

SVM regularization validation



Normalizing alpha validation



Taking the object detection result as “words” in the text

multiNB

train accuracy: 0.391938390955

test accuracy: 0.382585751979

GuassianNB

train accuracy: 0.79485498935

test accuracy: 0.142480211082

svm

train accuracy: 0.33704735376

test accuracy: 0.339050131926

reweighting does not make qualitative change

Combine Text result with the trained classification model

Best result was in normalized result combine:

train accuracy 0.966573816156

test accuracy 0.852242744063

val accuracy 0.870712401055

