This document records test result of fake detection models.

**Numeric feature:**

***With preprocessing:***

\*\*\*\*\*\*\*\*\*The following result is based on UFO numerical data\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 18.7......

[ 0.75434298 0.36124722 0.6153118 0.42583519 0.39860802]

cross validation mean and std:

0.511069042316 0.149938411107

confusion matrix:

[[ 0 4546]

[ 0 85251]]

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training logistic regression with weight: 18.71......

[ 0.6266147 0.79008909 0.43246102 0.58769488 0.74727171]

cross validation mean and std:

0.636826280624 0.126468186362

confusion matrix:

[[ 0 4546]

[ 0 85251]]

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training logistic regression with weight: 18.72......

[ 0.62466592 0.81219376 0.39487751 0.79521158 0.80595768]

cross validation mean and std:

0.686581291759 0.161712317118

confusion matrix:

[[ 0 4546]

[ 0 85251]]

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training logistic regression with weight: 18.73......

[ 0.63084633 0.44587973 0.44231626 0.40723831 0.5016147 ]

cross validation mean and std:

0.485579064588 0.0786698165437

confusion matrix:

[[ 0 4546]

[ 0 85251]]

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training logistic regression with weight: 18.74......

[ 0.38797327 0.37683742 0.68585746 0.65863029 0.25879733]

cross validation mean and std:

0.473619153675 0.168596890786

confusion matrix:

[[ 0 4546]

[ 0 85251]]

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training logistic regression with weight: 18.75......

[ 0.47989978 0.47138085 0.67243875 0.51185969 0.24710468]

cross validation mean and std:

0.47653674833 0.135869256306

confusion matrix:

[[ 0 4546]

[ 0 85251]]

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training logistic regression with weight: 18.76......

[ 0.24125835 0.49961024 0.4594098 0.60679287 0.70729399]

cross validation mean and std:

0.502873051225 0.156798724013

confusion matrix:

[[ 4546 0]

[85251 0]]

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training logistic regression with weight: 18.77......

[ 0.59175947 0.79209354 0.67873051 0.54259465 0.34654788]

cross validation mean and std:

0.590345211581 0.148481380996

confusion matrix:

[[ 4546 0]

[85251 0]]

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training logistic regression with weight: 18.78......

[ 0.70501114 0.57728285 0.33552339 0.33819599 0.47110245]

cross validation mean and std:

0.485423162584 0.142132294985

confusion matrix:

[[ 4546 0]

[85251 0]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 18.79......

[ 0.83335189 0.47533408 0.46815145 0.68240535 0.52216036]

cross validation mean and std:

0.596280623608 0.141533898187

confusion matrix:

[[ 4546 0]

[85251 0]]

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training svm with weight: 1......

[ 0.95283964 0.95707127 0.95339644 0.95367483 0.9535078 ]

cross validation mean and std:

0.954097995546 0.00151283810225

confusion matrix:

[[ 1122 3424]

[ 373 84878]]

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training svm with weight: 2......

[ 0.97449889 0.9763363 0.97410913 0.97260579 0.97639198]

cross validation mean and std:

0.974788418708 0.00143363082582

confusion matrix:

[[ 3645 901]

[ 1091 84160]]

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training svm with weight: 3......

[ 0.9785078 0.97488864 0.97744989 0.97739421 0.97756125]

cross validation mean and std:

0.977160356347 0.00120627605017

confusion matrix:

[[ 4033 513]

[ 1338 83913]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 4......

[ 0.97806236 0.9766147 0.97989978 0.97873051 0.97928731]

cross validation mean and std:

0.978518930958 0.00112928795849

confusion matrix:

[[ 4146 400]

[ 1445 83806]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 5......

[ 0.9766147 0.9766147 0.97889755 0.97667038 0.97711581]

cross validation mean and std:

0.977182628062 0.000877827713809

confusion matrix:

[[ 4219 327]

[ 1520 83731]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 6......

[ 0.97789532 0.97616927 0.97683742 0.97733853 0.97889755]

cross validation mean and std:

0.977427616927 0.000929427243424

confusion matrix:

[[ 4262 284]

[ 1578 83673]]

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training svm with weight: 7......

[ 0.9782294 0.97717149 0.97761693 0.97945434 0.97761693]

cross validation mean and std:

0.978017817372 0.000793229568753

confusion matrix:

[[ 4301 245]

[ 1627 83624]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 8......

[ 0.97834076 0.97772829 0.97834076 0.977951 0.97811804]

cross validation mean and std:

0.978095768374 0.000235174967505

confusion matrix:

[[ 4334 212]

[ 1690 83561]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 9......

[ 0.97577951 0.97722717 0.97644766 0.97522272 0.97711581]

cross validation mean and std:

0.97635857461 0.000769583632213

confusion matrix:

[[ 4369 177]

[ 1728 83523]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 10......

[ 0.97583519 0.97744989 0.97806236 0.97884187 0.9763363 ]

cross validation mean and std:

0.977305122494 0.00110047966847

confusion matrix:

[[ 4383 163]

[ 1772 83479]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 11......

[ 0.977951 0.97594655 0.97605791 0.97600223 0.97577951]

cross validation mean and std:

0.976347438753 0.00080717684964

confusion matrix:

[[ 4395 151]

[ 1811 83440]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 12......

[ 0.97538976 0.97455457 0.97600223 0.97438753 0.97789532]

cross validation mean and std:

0.975645879733 0.00126704332315

confusion matrix:

[[ 4405 141]

[ 1860 83391]]

***without preprocessing***

\*\*\*\*\*\*\*\*\*The following result is based on UFO numerical data\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 1......

[ 0.94777283 0.94766147 0.94983296 0.94821826 0.94587973]

cross validation mean and std:

0.947873051225 0.00126400566803

confusion matrix:

[[ 0 4546]

[ 0 85251]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 2......

[ 0.95 0.94871938 0.94966592 0.9481069 0.94632517]

cross validation mean and std:

0.948563474388 0.00130551010154

confusion matrix:

[[ 0 4546]

[ 0 85251]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 3......

[ 0.94949889 0.94899777 0.94933185 0.94977728 0.95005568]

cross validation mean and std:

0.949532293987 0.000363581909072

confusion matrix:

[[ 0 4546]

[ 0 85251]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 4......

[ 0.95050111 0.94844098 0.947049 0.94727171 0.94571269]

cross validation mean and std:

0.947795100223 0.00160665379037

confusion matrix:

[[ 0 4546]

[ 0 85251]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 5......

[ 0.9497216 0.94933185 0.95044543 0.95200445 0.9483853 ]

cross validation mean and std:

0.949977728285 0.00121201927757

confusion matrix:

[[ 0 4546]

[ 0 85251]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 6......

[ 0.94855234 0.94961024 0.94922049 0.95100223 0.95300668]

cross validation mean and std:

0.950278396437 0.00158191900731

confusion matrix:

[[ 0 4546]

[ 0 85251]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 7......

[ 0.95044543 0.95122494 0.94860802 0.94671492 0.94922049]

cross validation mean and std:

0.949242761693 0.00156005374576

confusion matrix:

[[ 0 4546]

[ 0 85251]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 8......

[ 0.94777283 0.94821826 0.95050111 0.94922049 0.94966592]

cross validation mean and std:

0.949075723831 0.000983240091521

confusion matrix:

[[ 0 4546]

[ 0 85251]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 9......

[ 0.94988864 0.94699332 0.94977728 0.94961024 0.94855234]

cross validation mean and std:

0.948964365256 0.00109426445403

confusion matrix:

[[ 0 4546]

[ 0 85251]]

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training logistic regression with weight: 10......

[ 0.94760579 0.94933185 0.95116927 0.95122494 0.94988864]

cross validation mean and std:

0.949844097996 0.0013369523292

confusion matrix:

[[ 0 4546]

[ 0 85251]]

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training logistic regression with weight: 11......

[ 0.94877506 0.9502784 0.94955457 0.94966592 0.94710468]

cross validation mean and std:

0.949075723831 0.00109539711602

confusion matrix:

[[ 0 4546]

[ 0 85251]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 12......

[ 0.95061247 0.94944321 0.9481069 0.94966592 0.94799555]

cross validation mean and std:

0.94916481069 0.00099102875106

confusion matrix:

[[ 0 4546]

[ 0 85251]]

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training logistic regression with weight: 13......

[ 0.93908686 0.94827394 0.94504454 0.94443207 0.95094655]

cross validation mean and std:

0.945556792873 0.00399549227406

confusion matrix:

[[ 4 4542]

[ 69 85182]]

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training logistic regression with weight: 14......

[ 0.93112472 0.91503341 0.92449889 0.92071269 0.93446548]

cross validation mean and std:

0.925167037862 0.00699904366107

confusion matrix:

[[ 132 4414]

[ 1915 83336]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 15......

[ 0.85801782 0.87538976 0.84576837 0.87622494 0.88363029]

cross validation mean and std:

0.86780623608 0.0138583229438

confusion matrix:

[[ 474 4072]

[ 7312 77939]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 16......

[ 0.76959911 0.76703786 0.7532294 0.7873608 0.75517817]

cross validation mean and std:

0.766481069042 0.0122422027599

confusion matrix:

[[ 1223 3323]

[18473 66778]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 17......

[ 0.55896437 0.6094098 0.57377506 0.64749443 0.61325167]

cross validation mean and std:

0.600579064588 0.0312725650298

confusion matrix:

[[ 2127 2419]

[32836 52415]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 18......

[ 0.44899777 0.39521158 0.42878619 0.42060134 0.45072383]

cross validation mean and std:

0.428864142539 0.0204156016733

confusion matrix:

[[ 3116 1430]

[49173 36078]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 19......

[ 0.36497773 0.372049 0.37266147 0.37082405 0.3685412 ]

cross validation mean and std:

0.369810690423 0.00279760577679

confusion matrix:

[[ 3411 1135]

[55480 29771]]

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training svm with weight: 1......

[ 0.94910913 0.94994432 0.94883073 0.95094655 0.95155902]

cross validation mean and std:

0.950077951002 0.00104499209192

confusion matrix:

[[ 75 4471]

[ 0 85251]]

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training svm with weight: 2......

[ 0.94576837 0.94905345 0.95066815 0.94315145 0.94716036]

cross validation mean and std:

0.947160356347 0.00260374350897

confusion matrix:

[[ 737 3809]

[ 35 85216]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 3......

[ 0.93981069 0.94214922 0.9422049 0.94075724 0.94131403]

cross validation mean and std:

0.941247216036 0.000898767874119

confusion matrix:

[[ 1354 3192]

[ 289 84962]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 4......

[ 0.93257238 0.93034521 0.93496659 0.93346325 0.93691537]

cross validation mean and std:

0.933652561247 0.00221421621766

confusion matrix:

[[ 1850 2696]

[ 747 84504]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 5......

[ 0.92188196 0.92494432 0.92332962 0.92138085 0.92438753]

cross validation mean and std:

0.923184855234 0.00137949858792

confusion matrix:

[[ 2311 2235]

[ 1458 83793]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 6......

[ 0.90946548 0.90974388 0.90918708 0.90651448 0.90996659]

cross validation mean and std:

0.908975501114 0.00125810550045

confusion matrix:

[[ 2747 1799]

[ 2465 82786]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 7......

[ 0.8892539 0.89560134 0.8905902 0.89136971 0.89187082]

cross validation mean and std:

0.891737193764 0.00212446945598

confusion matrix:

[[ 3098 1448]

[ 3845 81406]]

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training svm with weight: 8......

[ 0.87917595 0.88129176 0.88368597 0.87733853 0.8825167 ]

cross validation mean and std:

0.880801781737 0.00228635181588

confusion matrix:

[[ 3396 1150]

[ 5206 80045]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 9......

[ 0.86848552 0.86687082 0.86520045 0.86932071 0.86614699]

cross validation mean and std:

0.867204899777 0.00150766514887

confusion matrix:

[[ 3591 955]

[ 6408 78843]]

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training svm with weight: 10......

[ 0.85178174 0.8545657 0.85228285 0.85501114 0.85528953]

cross validation mean and std:

0.853786191537 0.00145917980671

confusion matrix:

[[ 3793 753]

[ 7597 77654]]

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training svm with weight: 11......

[ 0.84420935 0.84916481 0.84120267 0.83853007 0.84404232]

cross validation mean and std:

0.843429844098 0.0035451575456

confusion matrix:

[[ 3913 633]

[ 8625 76626]]

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training svm with weight: 12......

[ 0.83463252 0.83958797 0.83201559 0.83390869 0.83507795]

cross validation mean and std:

0.83504454343 0.00250113440961

confusion matrix:

[[ 4019 527]

[ 9545 75706]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

**Description feature:**

\*\*\*\*\*\*\*\*\*The following result is based on UFO description summary\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 1......

[ 0.95151649 0.95162719 0.94908125 0.94791897 0.94930263]

Logistic -- cross validation mean and std:

0.949889307062 0.00145239933291

Logistic -- confusion matrix:

[[ 208 4350]

[ 14 85768]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 2......

[ 0.945207 0.94708878 0.95007749 0.94935798 0.9483064 ]

Logistic -- cross validation mean and std:

0.94800752712 0.00172539010568

Logistic -- confusion matrix:

[[ 543 4015]

[ 170 85612]]

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training logistic regression with weight: 3......

[ 0.94210759 0.93994908 0.9397277 0.93950631 0.94210759]

Logistic -- cross validation mean and std:

0.940679654638 0.00117428461017

Logistic -- confusion matrix:

[[ 1034 3524]

[ 682 85100]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 4......

[ 0.93264335 0.92860306 0.93048484 0.9318685 0.93087226]

Logistic -- cross validation mean and std:

0.930894398937 0.00137303869855

Logistic -- confusion matrix:

[[ 1427 3131]

[ 1492 84290]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 5......

[ 0.91797653 0.91493248 0.91808723 0.92340049 0.92002435]

Logistic -- cross validation mean and std:

0.918884215187 0.00278467000739

Logistic -- confusion matrix:

[[ 1802 2756]

[ 2527 83255]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 6......

[ 0.90480407 0.90463803 0.90402922 0.90513615 0.90181536]

Logistic -- cross validation mean and std:

0.904084569404 0.00119014213467

Logistic -- confusion matrix:

[[ 2092 2466]

[ 3858 81924]]

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training logistic regression with weight: 7......

[ 0.89279389 0.88991587 0.89157627 0.88770201 0.89655745]

Logistic -- cross validation mean and std:

0.891709098959 0.00296557928707

Logistic -- confusion matrix:

[[ 2545 2013]

[ 5362 80420]]

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training logistic regression with weight: 8......

[ 0.87845915 0.87690945 0.87425282 0.87574718 0.87314589]

Logistic -- cross validation mean and std:

0.875702900155 0.00188125896238

Logistic -- confusion matrix:

[[ 2744 1814]

[ 6855 78927]]

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training logistic regression with weight: 9......

[ 0.85720611 0.86030551 0.8557671 0.85947532 0.85759354]

Logistic -- cross validation mean and std:

0.858069515165 0.00162782612089

Logistic -- confusion matrix:

[[ 2927 1631]

[ 8252 77530]]

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training logistic regression with weight: 10......

[ 0.8463582 0.84890414 0.84298207 0.84663493 0.84215187]

Logistic -- cross validation mean and std:

0.845406243082 0.00249474477143

Logistic -- confusion matrix:

[[ 3096 1462]

[ 9650 76132]]

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training logistic regression with weight: 11......

[ 0.82787248 0.83235555 0.82792783 0.82571397 0.82388754]

Logistic -- cross validation mean and std:

0.827551472216 0.0028328310339

Logistic -- confusion matrix:

[[ 3237 1321]

[10991 74791]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 12......

[ 0.81453398 0.81425725 0.8127629 0.81525349 0.81724596]

Logistic -- cross validation mean and std:

0.814810715076 0.00146307424811

Logistic -- confusion matrix:

[[ 3374 1184]

[12246 73536]]

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training logistic regression with weight: 13......

[ 0.80783706 0.80634271 0.79737658 0.80418419 0.80219172]

Logistic -- cross validation mean and std:

0.803586451184 0.00364773120969

Logistic -- confusion matrix:

[[ 3483 1075]

[13451 72331]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 14......

[ 0.79898162 0.79416648 0.79366836 0.7922847 0.79162054]

Logistic -- cross validation mean and std:

0.794144343591 0.00258666446063

Logistic -- confusion matrix:

[[ 3582 976]

[14569 71213]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 15......

[ 0.78282046 0.77778393 0.77855878 0.78243303 0.7852557 ]

Logistic -- cross validation mean and std:

0.78137037857 0.00279626223767

Logistic -- confusion matrix:

[[ 3673 885]

[15590 70192]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 16......

[ 0.7742971 0.77473987 0.76892849 0.77678769 0.77086562]

Logistic -- cross validation mean and std:

0.773123754704 0.00283239846797

Logistic -- confusion matrix:

[[ 3741 817]

[16599 69183]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 17......

[ 0.76383662 0.7680983 0.76704671 0.7609586 0.7561988 ]

Logistic -- cross validation mean and std:

0.763227806066 0.00431815973677

Logistic -- confusion matrix:

[[ 3820 738]

[17596 68186]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 18......

[ 0.75830197 0.75536861 0.7530994 0.75149435 0.75725039]

Logistic -- cross validation mean and std:

0.755102944432 0.0025279223237

Logistic -- confusion matrix:

[[ 3868 690]

[18506 67276]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training logistic regression with weight: 19......

[ 0.74905911 0.74983396 0.74424397 0.74767545 0.74064645]

Logistic -- cross validation mean and std:

0.746291786584 0.00341124673322

Logistic -- confusion matrix:

[[ 3921 637]

[19358 66424]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 1......

[ 0.95251273 0.94891521 0.94957937 0.94957937 0.94880452]

SVM -- cross validation mean and std:

0.949878237768 0.00135642892912

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 2......

[ 0.94736551 0.95018818 0.95018818 0.94930263 0.95096303]

SVM -- cross validation mean and std:

0.949601505424 0.00123540459848

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 3......

[ 0.94930263 0.95074164 0.95052026 0.94802967 0.95179323]

SVM -- cross validation mean and std:

0.950077485056 0.00129420827125

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 4......

[ 0.94797432 0.94825105 0.95018818 0.95151649 0.95206996]

SVM -- cross validation mean and std:

0.95 0.00166024646971

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 5......

[ 0.9514058 0.94697808 0.94897056 0.94869382 0.94957937]

SVM -- cross validation mean and std:

0.949125525791 0.00143021101451

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 6......

[ 0.94874917 0.94841709 0.95112907 0.95184857 0.94869382]

SVM -- cross validation mean and std:

0.949767544831 0.00142815340258

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 7......

[ 0.94941333 0.94841709 0.94731016 0.94957937 0.95018818]

SVM -- cross validation mean and std:

0.948981624972 0.00101113015246

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 8......

[ 0.95074164 0.94863848 0.95157184 0.9491366 0.9506863 ]

SVM -- cross validation mean and std:

0.950154970113 0.00109278095446

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 9......

[ 0.95024352 0.95118441 0.95085234 0.9490259 0.94836174]

SVM -- cross validation mean and std:

0.949933584237 0.00107696890405

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 10......

[ 0.95234669 0.9498561 0.9467567 0.94841709 0.94957937]

SVM -- cross validation mean and std:

0.949391188842 0.00183716932461

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 11......

[ 0.94941333 0.95278946 0.94957937 0.95101838 0.95096303]

SVM -- cross validation mean and std:

0.950752711977 0.00121933182468

SVM -- confusion matrix:

[[ 0 4558]

[ 0 85782]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

linear svm

\*\*\*\*\*\*\*\*\*The following result is based on UFO description summary\*\*\*\*\*\*\*\*\*\*

training svm with weight: 1......

[ 0.94897056 0.94974541 0.94653531 0.94515165 0.94487492]

LinearSVM -- cross validation mean and std:

0.947055567855 0.00197753483264

LinearSVM -- confusion matrix:

[[ 674 3884]

[ 23 85759]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 2......

[ 0.94343591 0.94266106 0.94216294 0.94260571 0.94061324]

LinearSVM -- cross validation mean and std:

0.94229577153 0.000935731866522

LinearSVM -- confusion matrix:

[[ 1080 3478]

[ 294 85488]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 3......

[ 0.93297543 0.93153642 0.9310383 0.93247731 0.93386097]

LinearSVM -- cross validation mean and std:

0.932377684304 0.00100687990182

LinearSVM -- confusion matrix:

[[ 1457 3101]

[ 863 84919]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 4......

[ 0.92362187 0.92201683 0.92063316 0.92107594 0.92135267]

LinearSVM -- cross validation mean and std:

0.921740092982 0.00104251358671

LinearSVM -- confusion matrix:

[[ 1771 2787]

[ 1749 84033]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 5......

[ 0.90502546 0.90469338 0.90862298 0.90923179 0.90557892]

LinearSVM -- cross validation mean and std:

0.906630506974 0.00190636250304

LinearSVM -- confusion matrix:

[[ 2058 2500]

[ 2920 82862]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 6......

[ 0.89334735 0.89351339 0.89323666 0.89390082 0.88775736]

LinearSVM -- cross validation mean and std:

0.892351117999 0.00230788802576

LinearSVM -- confusion matrix:

[[ 2336 2222]

[ 4246 81536]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 7......

[ 0.87707549 0.8738654 0.87569183 0.87591322 0.87928935]

LinearSVM -- cross validation mean and std:

0.876367057782 0.0017867225482

LinearSVM -- confusion matrix:

[[ 2786 1772]

[ 5894 79888]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 8......

[ 0.86036086 0.84929157 0.85698472 0.8533872 0.85908789]

LinearSVM -- cross validation mean and std:

0.855822448528 0.00402973987493

LinearSVM -- confusion matrix:

[[ 3000 1558]

[ 7469 78313]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 9......

[ 0.84093425 0.84270534 0.84181979 0.84292672 0.83556564]

LinearSVM -- cross validation mean and std:

0.840790347576 0.00270589333593

LinearSVM -- confusion matrix:

[[ 3191 1367]

[ 8932 76850]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 10......

[ 0.82798317 0.82820456 0.83019703 0.8276511 0.83113792]

LinearSVM -- cross validation mean and std:

0.829034757582 0.00137722656763

LinearSVM -- confusion matrix:

[[ 3370 1188]

[10335 75447]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 11......

[ 0.81757804 0.80971884 0.80905468 0.81481072 0.81032765]

LinearSVM -- cross validation mean and std:

0.812297985389 0.00332403354069

LinearSVM -- confusion matrix:

[[ 3496 1062]

[11605 74177]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 12......

[ 0.80208103 0.80152756 0.80268984 0.79754262 0.80435023]

LinearSVM -- cross validation mean and std:

0.801638255479 0.00225580149077

LinearSVM -- confusion matrix:

[[ 3604 954]

[12716 73066]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 13......

[ 0.78746956 0.78553243 0.79184193 0.78874253 0.78979411]

LinearSVM -- cross validation mean and std:

0.788676112464 0.00212674523148

LinearSVM -- confusion matrix:

[[ 3703 855]

[13843 71939]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 14......

[ 0.77651096 0.7751273 0.7804959 0.77507195 0.77684304]

LinearSVM -- cross validation mean and std:

0.776809829533 0.00197629523192

LinearSVM -- confusion matrix:

[[ 3782 776]

[14769 71013]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 15......

[ 0.769648 0.76760018 0.77285809 0.77136374 0.77258136]

LinearSVM -- cross validation mean and std:

0.770810272305 0.00196429288741

LinearSVM -- confusion matrix:

[[ 3847 711]

[15700 70082]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 16......

[ 0.75658623 0.75011069 0.76001771 0.7563095 0.76566305]

LinearSVM -- cross validation mean and std:

0.757737436352 0.00509011818645

LinearSVM -- confusion matrix:

[[ 3917 641]

[16567 69215]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 17......

[ 0.74512951 0.74983396 0.75149435 0.74413327 0.74640248]

LinearSVM -- cross validation mean and std:

0.747398715962 0.00281103402413

LinearSVM -- confusion matrix:

[[ 3970 588]

[17299 68483]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 18......

[ 0.74363516 0.74734337 0.74501882 0.74944654 0.74136595]

LinearSVM -- cross validation mean and std:

0.745361965907 0.00281699934387

LinearSVM -- confusion matrix:

[[ 4007 551]

[17989 67793]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*

training svm with weight: 19......

[ 0.74286031 0.73577596 0.73317467 0.74164268 0.73417091]

LinearSVM -- cross validation mean and std:

0.737524905911 0.00396623778742

LinearSVM -- confusion matrix:

[[ 4050 508]

[18591 67191]]

\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*