Kaggle submissions

- All submissions (3000 teams)
- Our submissions and how we place amongst other competitors (3000 teams...)

In [1]:
```
# Ugly incantation to make our framework working
import sys
sys.path.insert(0, r'/SAMDevelop/QuoraPairs/BruteForce/Tools')

#import all our small tools (paths, cache, print,zip,excel, pandas, progress,..)
from Tools.all import *

# setup the name of our experiment
# it will be used to store every result in a unique place
EXPERIMENT='kaggle_submissions'
print_alert('You will work on environment %s' %EXPERIMENT)
prepare_environment(EXPERIMENT)
```

You will work on environment kaggle_submissions

Prepare kaggle_submissions environment in ../kaggle_submissions

Done

All submissions

All submissions until the challenge closed

In [2]:
```
# Read the whole set of all past submissions
all_submissions = pandas.read_csv('../Results/all_submissions.csv')
#all_submissions = pandas.read_csv('../Results/quora-question-pairs-publicleaderboard.csv')
print_info('Nb submissions %d' % len(all_submissions))

# Group by team and keep the best kaggle score in the min
min_by_team = all_submissions.sort_values('TeamId').groupby(['TeamId']).min()
assert len(min_by_team) == len(all_submissions['TeamId'].unique())
print_info('Nb teams %d' % len(min_by_team))

# compute ranks

min_by_team['rank%']= min_by_team['Score'].rank(ascending=True,pct=True)*100.
min_by_team['rank'] = min_by_team['Score'].rank(ascending=True,pct=False)

# Zoom on the interesting area ie score < 0.2
min_by_team_1 = min_by_team[min_by_team['Score']<=1]
print_info('Nb teams with a kaggle score <1: %d' % len(min_by_team_1))
min_by_team
```

Nb submissions 20011

Nb teams 3295

Nb teams with a kaggle score <1: 2854

Out[2]:

	TeamName	SubmissionDate	Score	rank%	rank
TeamId					
525228	DataCanary	02/04/2017	0.72023	85.128983	2805.0
546560	FernandoTN	04/06/2017	0.32220	35.553869	1171.5
546564	Human Being	17/03/2017	0.34406	42.610015	1404.0
546565	anokas	04/06/2017	0.14744	7.010622	231.0
546580	gaxnnd	01/06/2017	0.14493	5.948407	196.0
...	...	...	...	...	...
704116	Enzo	01/06/2017	0.16032	17.056146	562.0
704176	Dewey L◆	03/06/2017	6.41423	91.714719	3022.0
704201	Chell	04/06/2017	0.40751	62.610015	2063.0
709137	dmacjam	05/06/2017	0.24283	24.097117	794.0
713066	Ashton	02/06/2017	0.77902	57.845220	1906.0

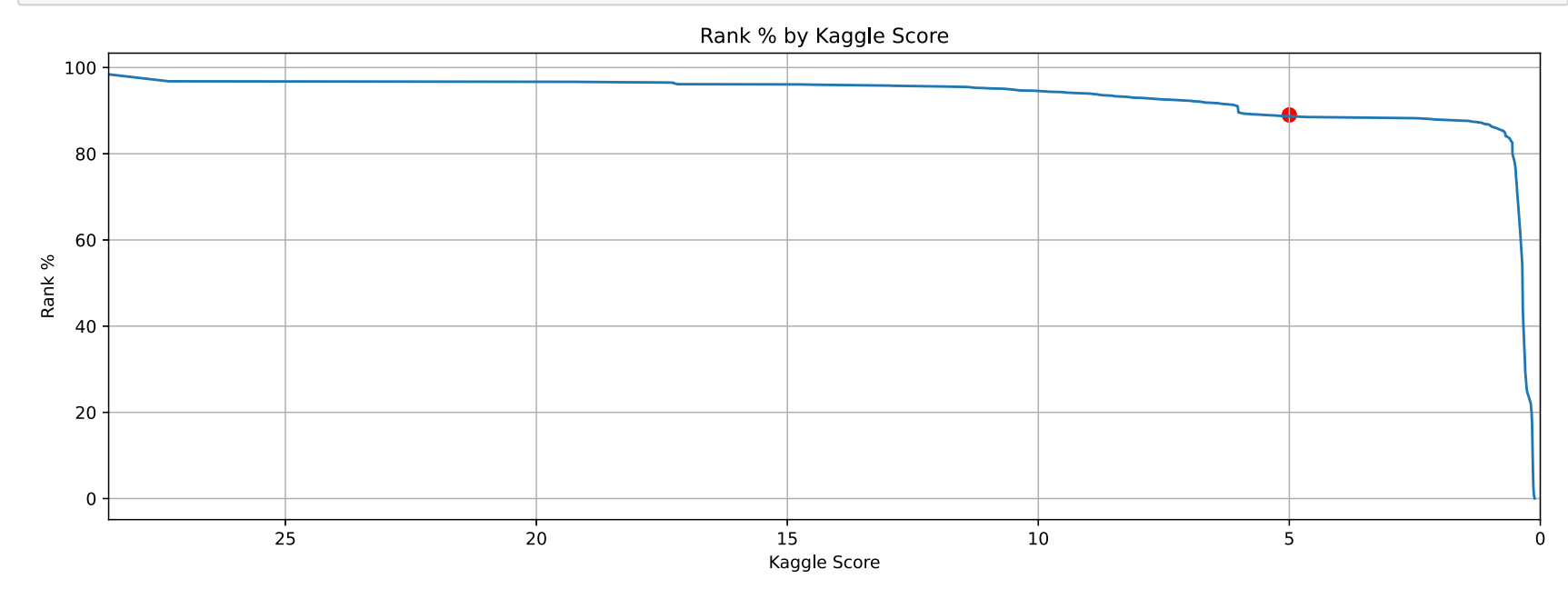
3295 rows × 5 columns

Just for fun, Here is the whole set of submissions including the stupid ones

- x is the kaggle score
- y is the rank %

For example, if you get a score of 5 (a mistake), 89 % of people has done better than you

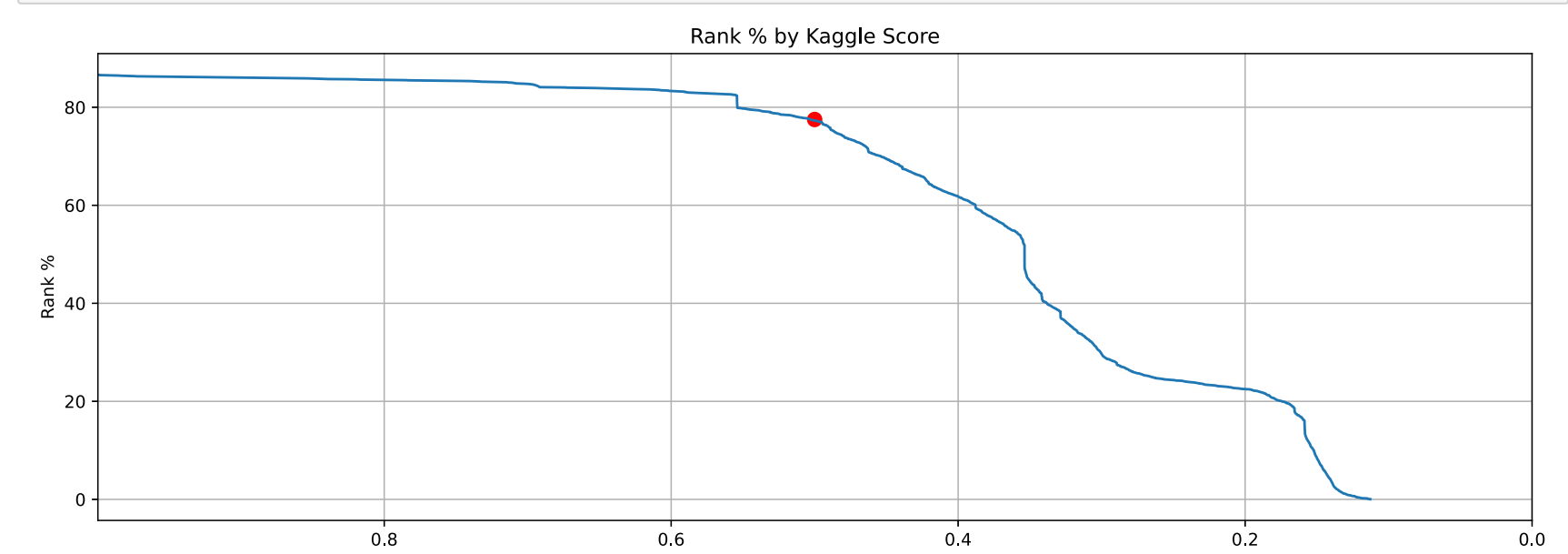
In [3]:
```
plot.figure(figsize=(15,5))
plot.plot('Score','rank%',data=min_by_team.sort_values('Score'))
plot.xlim(min_by_team['Score'].max(),0)
plot.scatter(5,89,color='red',lw=3)
plot.title('Rank % by Kaggle Score')
plot.xlabel('Kaggle Score')
plot.ylabel('Rank %')
plot.grid(True)
```



Now, focus on the interesting part ie where the score < 0.1

the red dot means: 77% of submissions has done better (less) than 0.5

In [4]:
```
plot.figure(figsize=(15,5))
plot.plot('Score','rank%',data=min_by_team_1.sort_values('Score'))
plot.scatter(0.5,77.5,color='red',lw=3)
plot.xlim(min_by_team_1['Score'].max(),0)
plot.title('Rank % by Kaggle Score')
plot.xlabel('Kaggle Score')
plot.ylabel('Rank %')
plot.grid(True)
```



Now, my submissions

In [5]:
```
# This will need my credentials at kaggle to work
my_submissions = load_kaggle_submissions()
```

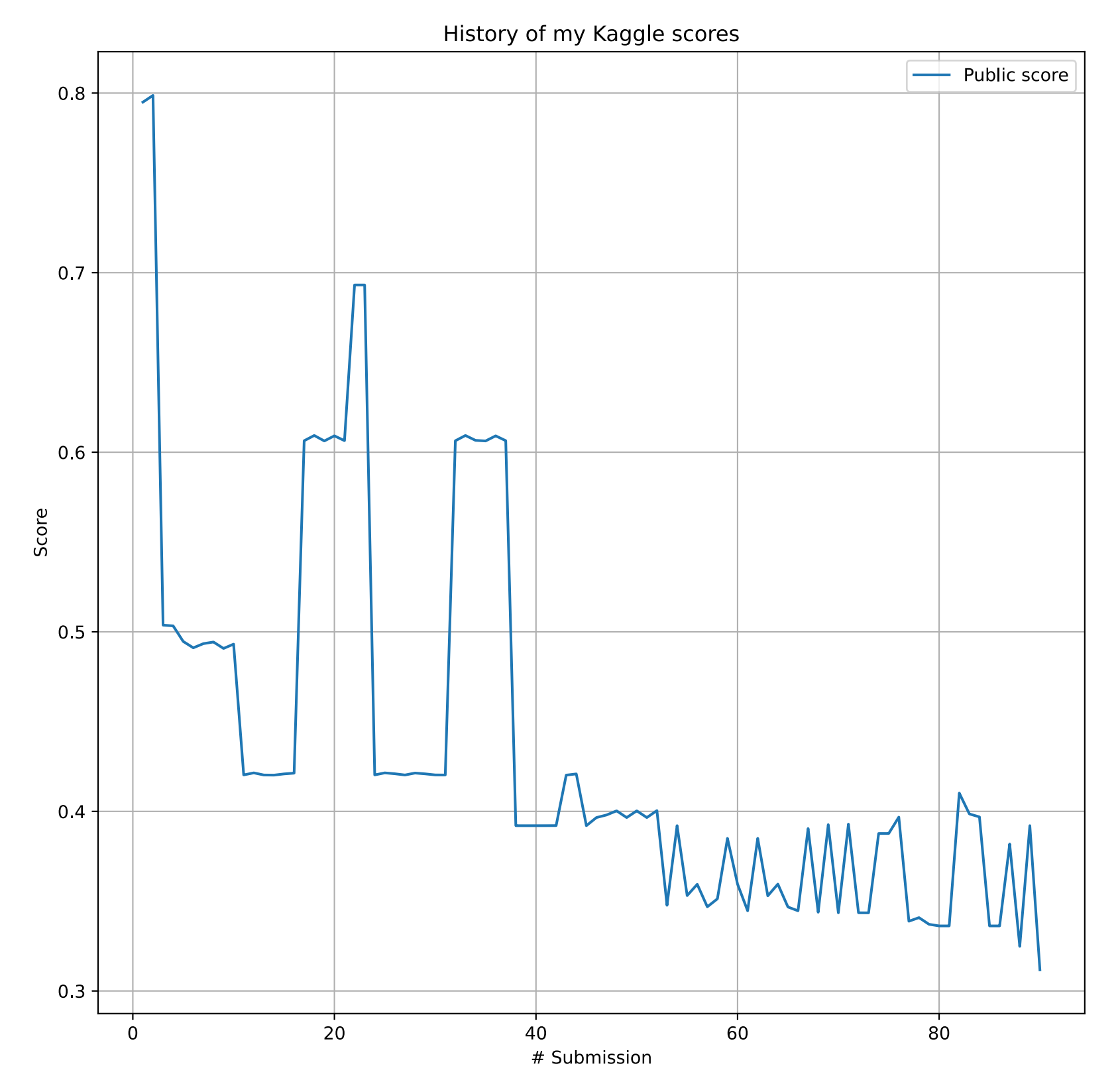
Load all Kaggle submissions

All submissions are available in .csv format with /SAMDevelop/QuoraPairs/kaggle_submissions/kaggle_submissions/kaggle_submissions.csv

All submissions are available in .xlsx format with /SAMDevelop/QuoraPairs/kaggle_submissions/kaggle_submissions/kaggle_submissions.xlsx

In [6]:
```
print_info("Nb submissions %d. Fortunately, it was scripted..." % len(my_submissions))
x = numpy.arange(len(my_submissions['description']),0,-1)
width = 0.35
fig = plot.figure(figsize=(10, 10))
plot.plot(x,my_submissions['publicScore'],label='Public score')
plot.ylabel('Score')
plot.xlabel('# Submission')
plot.title('History of my Kaggle scores')
plot.grid(True)
plot.legend()
plot.save('only_my_submissions')
plot.show()
```

Nb submissions 98. Fortunately, it was scripted...



Prepare the merge of global submissions and mines

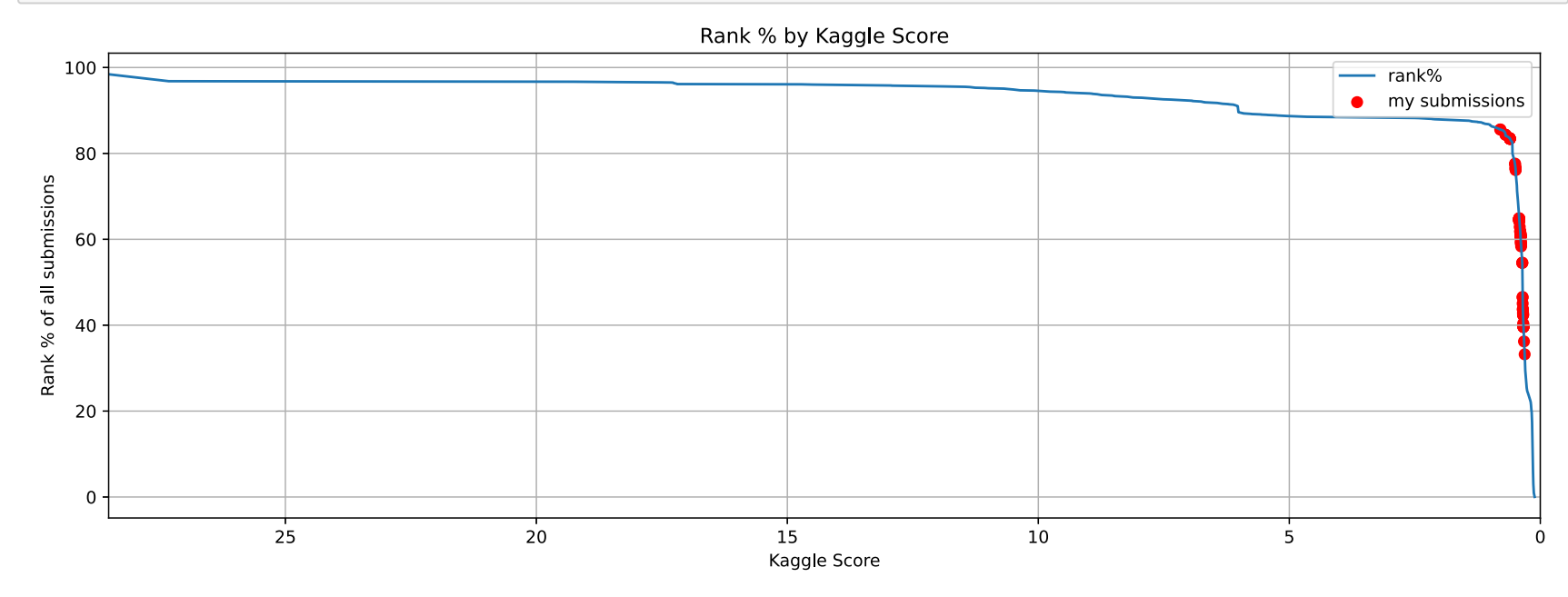
In [7]:
```
# Be careful : this can be done only one time

my_submissions['SubmissionDate'] = my_submissions['date']
my_submissions['Score'] = my_submissions['publicScore']
my_submissions = my_submissions.drop(columns=['date','fileName','privateScore','publicScore'])
my_submissions['TeamName'] = 'Alain Charroux'
my_submissions['rank%'] = numpy.nan
my_submissions['rank'] = numpy.nan
my_submissions['description'] = None
min_by_team_1.reindex()
assert len(min_by_team_1.columns) == len(my_submissions.columns)
```

Merge and Find the rank of all my submissions

In [8]:
```
merged_submissions = min_by_team.append(my_submissions)
merged_submissions = merged_submissions.sort_values('Score').interpolate()
```

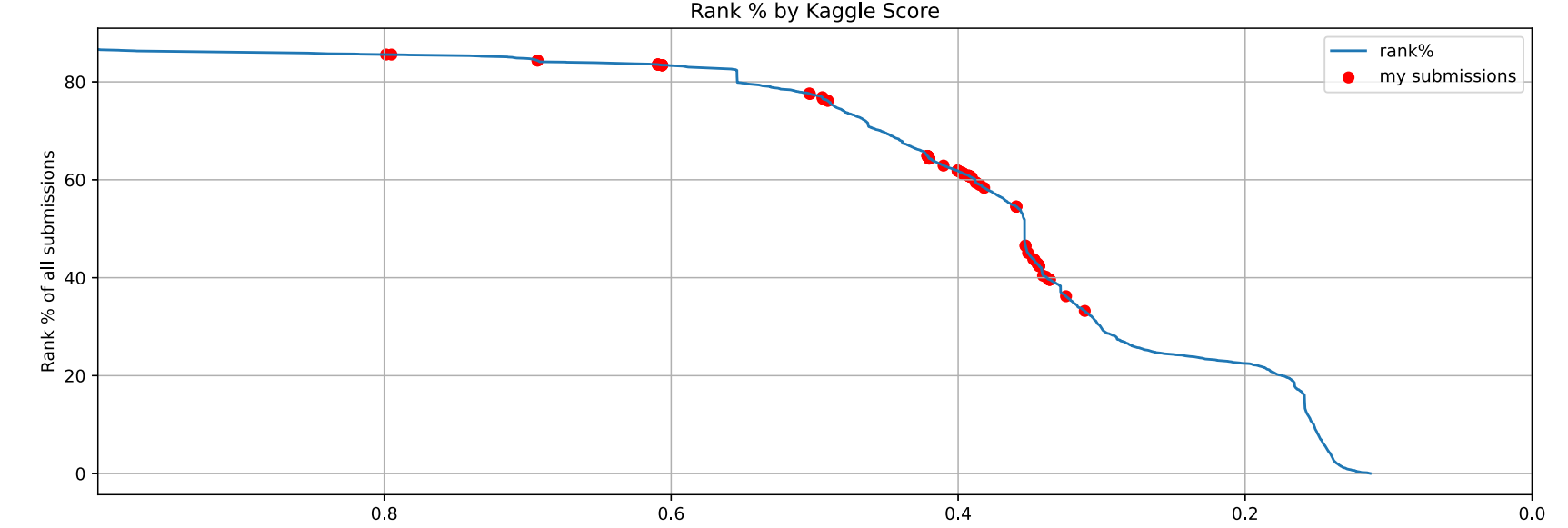
Graph everything

In [9]:
```
my_submissions_merged = merged_submissions[merged_submissions['TeamName']=='Alain Charroux']
plot.figure(figsize=(15,5))
plot.plot('Score','rank%',data = merged_submissions.sort_values('Score'),label='rank%')
plot.xlim(merged_submissions['Score'].max(),0)
plot.scatter('Score','rank%',data=my_submissions_merged,color='red',label='my submissions')
plot.title('Rank % by Kaggle Score')
plot.xlabel('Kaggle Score')
plot.ylabel('Rank % of all submissions')
plot.grid(True)
plot.legend()
plot.save('all_submissions')
```



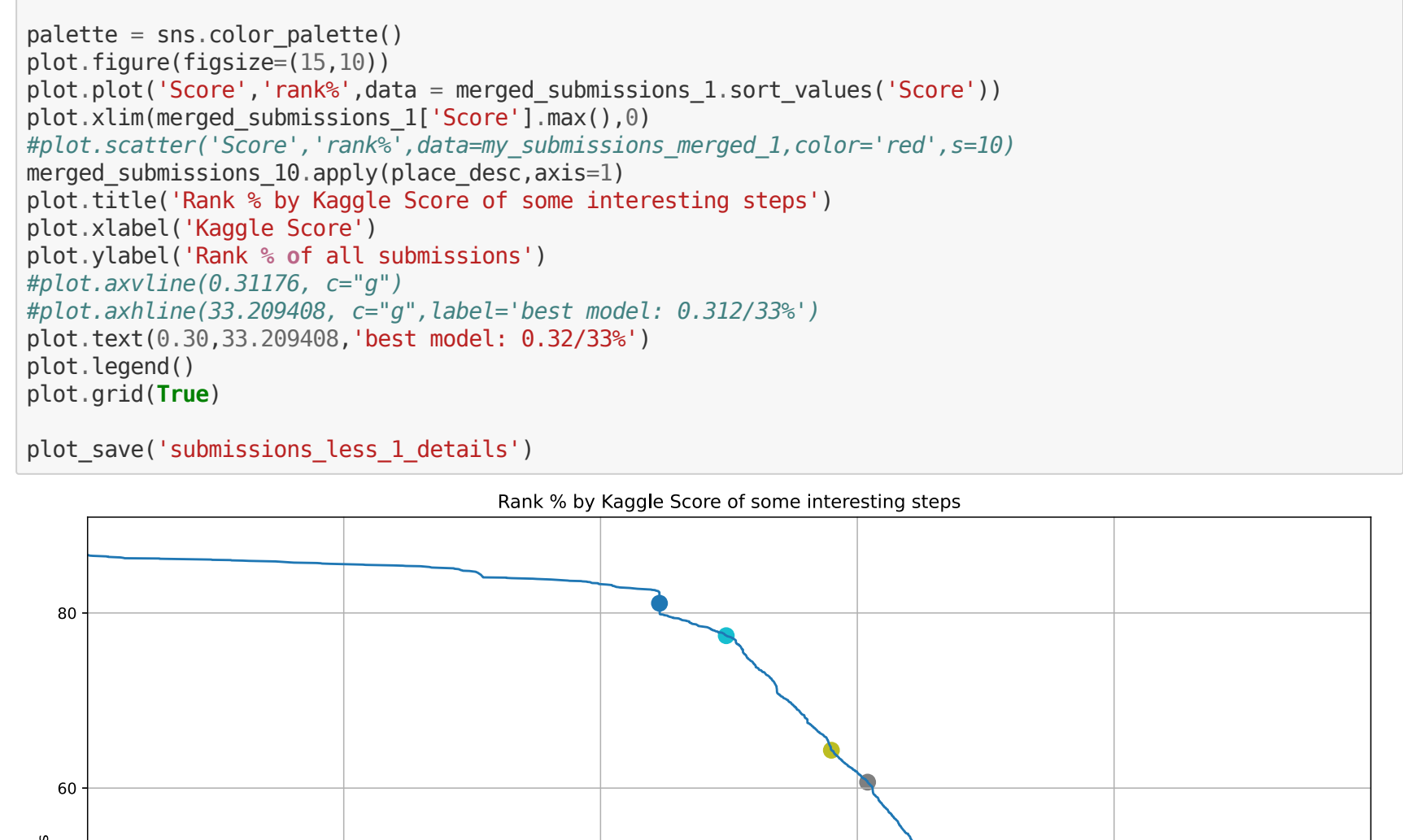
Focus on scores < 1.

In [10]:
```
merged_submissions_1 = merged_submissions[merged_submissions['Score']<1]
my_submissions_merged_1 = merged_submissions_1[merged_submissions_1['TeamName']=='Alain Charroux']
plot.figure(figsize=(15,5))
plot.plot('Score','rank%',data = merged_submissions_1.sort_values('Score'),label='rank%')
plot.xlim(merged_submissions_1['Score'].max(),0)
plot.scatter('Score','rank%',data=my_submissions_merged_1,color='red',label='my submissions')

plot.title('Rank % by Kaggle Score')
plot.xlabel('Kaggle Score')
plot.ylabel('Rank % of all submissions')
plot.grid(True)
plot.legend()
plot.save('submissions_less_1')
```



Adding a bit of information on model

In [21]:
```
interesting_models = {
    '1:Constant score 0.369':0.5541,
    '2:Multinomial Naive Bayes/Nb common words/no weight': 0.5021,
    '3:2+weight': 0.4202,
    '4:xgboost/Nb common words/weight': 0.392,
    '5:4+all features/hyper param': 0.345,
    '6:xgboost/all stop words/all features':0.345,
    '7:6+full clean':0.344,
    '8:7+lemme/entities':0.339,
    '9:8+newsgroups':0.337,
    '10:9+spacy similarities':0.336,
    '11:10+hyper param: best model':0.31376
}

def desc_plot(r):
    plot.scatter(r.Score,r['rank%'],s=100,label=r.description)

# painfull adapt our dict to format of submissions
models = pandas.DataFrame.from_dict(interesting_models,orient='index').reindex()
#models = pandas.DataFrame()
models['Score'] = models[0]
models['rank%'] = numpy.nan
models['rank'] = numpy.nan
models['TeamName'] = ''
models['SubmissionDate'] = None
models['description'] = models.index

merged_submissions_10 = merged_submissions_1.append(models)
merged_submissions_10 = merged_submissions_10.sort_values('Score').interpolate()
merged_submissions_10 = merged_submissions_10[merged_submissions_10['TeamName']=='']

palette = sns.color_palette()
plot.figure(figsize=(15,10))
plot.plot('Score','rank%',data = merged_submissions_1.sort_values('Score'),label='rank%')
plot.xlim(merged_submissions_1['Score'].max(),0)
#plot.scatter('Score','rank%',data=my_submissions_merged_1,color='red',s=100)
merged_submissions_10.apply(plot_desc,axis=1)
plot.title('Rank % by Kaggle Score of some interesting steps')
plot.xlabel('Kaggle Score')
plot.ylabel('Rank % of all submissions')
#plot.axvline(0.31376,c='g')
#plot.axhline(0.31376,c='g')
#plot.axhline(37.209408, c='g',label='best model: 0.312/33%')
plot.text(0.30,33.209408,'best model: 0.32/33%')
plot.legend()
plot.grid(True)

plot.save('submissions_less_1_details')
```



In [14]: merged_submissions_10

Out[14]:

	TeamName	SubmissionDate	Score	rank%	rank	description	0
11.10+hyper param	!	None	0.31176	33.209408	1094.250000	11.10+hyper param	0.31176
10·1+spacy similarities	!	None	0.33600	29.559939	1303.500000	10·1+spacy similarities	0.33600
9·0+wwsgroups	!	None	0.33700	29.630906	1306.500000	9·0+wwsgroups	0.33700
8·7+lemme/entities	!	None	0.33900	40.227616	1325.500000	8·7+lemme/entities	0.33900
7.6+full clean	!	None	0.34400	42.573579	1402.750000	7.6+full clean	0.34400
6.xgboost/all stop words/all features	!	None	0.34500	42.843491	1411.666667	6.xgboost/all stop words/all features	0.34500
5.4+all features/hyper param	!	None	0.34800	43.816388	1440.750000	5.4+all features/hyper param	0.34800
4.xgboost/Nb common words/weight	!	None	0.39200	60.675256	1999.250000	4.xgboost/Nb common words/weight	0.39200
3·2+weight	!	None	0.42020	64.319676	2119.333333	3·2+weight	0.42020
2.Multinomial Naive Bayes/Nb common words/no weight	!	None	0.50210	77.465159	2550.500000	2.Multinomial Naive Bayes/Nb common words/no weight	0.50210
1.Constant score 0.369	!	None	0.55410	81.107739	2672.500000	1.Constant score 0.369	0.55410