




A ZOOM FILTER FOR APPLAUSE AND LAUGHTER

Meeting 13.10.21



Before we get started...

- Permission to Computing Resources
 1. MLP compute cluster
 2. Permission for *disk/scratch*
 3. Increasing disk quota

Where we left off

- Focus on laughter detection for now
- Evaluate the model used in Gillick et al's paper on ICSI DB
 - *only laughter snippets in ICSI*
- General approach
 - Maximise recall with a fixed precision (e.g. 98%)

Laughter in ICSI DB

- 8420 laughter only snippets
 - Average duration: 1.66s
 - Total duration: ~3.9h

Sample Output

Prediction

	Meeting	chanID	ID	Start	End	Length	Type
0	Bed015	chan2	me010	3864.323857	3864.974992	0.651135	laugh
1	Bed015	chan2	me010	4083.105240	4083.965669	0.860428	laugh
2	Bed015	chan0	mn015	2004.170491	2005.054174	0.883683	laugh
3	Bed015	chan0	mn015	3861.254220	3862.254177	0.999957	laugh
4	Bed015	chan0	mn015	3864.695934	3866.626084	1.930150	laugh
5	Bed015	chan0	mn015	4557.782706	4559.596582	1.813876	laugh
6	Bed015	chan1	me003	500.094989	500.653104	0.558116	laugh
7	Bed015	chan1	me003	1285.875489	1286.875447	0.999957	laugh
8	Bed015	chan1	me003	3695.284541	3696.331009	1.046467	laugh
9	Bed015	chan1	me003	3864.393621	3867.835335	3.441714	laugh
10	Bed015	chan1	me003	3916.833249	3917.902971	1.069722	laugh
11	Bed015	chan1	me003	4810.190565	4811.632364	1.441799	laugh
12	Bed015	chan3	fn050	1285.224334	1286.712663	1.488309	laugh
13	Bed015	chan3	fn050	3859.091521	3860.207753	1.116232	laugh
14	Bed015	chan3	fn050	3863.882015	3865.626127	1.744112	laugh

Actual Laughter (*me003*)

	Meeting	ID	Start	End	Length	Type
1	Bed015	me003	4.280	5.787	1.507	laugh
4	Bed015	me003	131.610	132.505	0.895	breath-laugh
6	Bed015	me003	459.490	460.265	0.775	laugh
10	Bed015	me003	802.558	805.651	3.093	laugh
17	Bed015	me003	959.091	960.224	1.133	laugh
19	Bed015	me003	963.497	965.041	1.544	laugh
23	Bed015	me003	975.810	977.348	1.538	laugh
28	Bed015	me003	1285.165	1287.467	2.302	laugh
34	Bed015	me003	1507.171	1508.685	1.514	laugh
35	Bed015	me003	1799.858	1800.703	0.845	laugh
37	Bed015	me003	1890.720	1891.574	0.854	laugh
38	Bed015	me003	2502.906	2503.676	0.770	laugh
40	Bed015	me003	2599.311	2600.105	0.794	laugh
43	Bed015	me003	2660.502	2661.341	0.839	laugh
47	Bed015	me003	3130.441	3131.313	0.872	laugh
49	Bed015	me003	3476.381	3477.630	1.249	laugh
60	Bed015	me003	3694.876	3696.920	2.044	laugh
65	Bed015	me003	3716.566	3717.963	1.397	laugh
69	Bed015	me003	3825.853	3826.710	0.857	laugh
72	Bed015	me003	3847.243	3848.670	1.427	laugh
76	Bed015	me003	3858.480	3861.140	2.660	laugh
80	Bed015	me003	3863.410	3869.740	6.330	laugh

Sample Output

Prediction (for 4 channels)

	Meeting	chanID	ID	Start	End	Length	Type
0	Bed015	chan2	me010	3864.323857	3864.974992	0.651135	laugh
1	Bed015	chan2	me010	4083.105240	4083.965669	0.860428	laugh
2	Bed015	chan0	mn015	2004.170491	2005.054174	0.883683	laugh
3	Bed015	chan0	mn015	3861.254220	3862.254177	0.999957	laugh
4	Bed015	chan0	mn015	3864.695934	3866.626084	1.930150	laugh
5	Bed015	chan0	mn015	4557.782706	4559.596582	1.813876	laugh
6	Bed015	chan1	me003	500.094989	500.653104	0.558116	laugh
7	Bed015	chan1	me003	1285.875489	1286.875447	0.999957	laugh
8	Bed015	chan1	me003	3695.284541	3696.331009	1.046467	laugh
9	Bed015	chan1	me003	3864.393621	3867.835335	3.441714	laugh
10	Bed015	chan1	me003	3916.833249	3917.902971	1.069722	laugh
11	Bed015	chan1	me003	4810.190565	4811.632364	1.441799	laugh
12	Bed015	chan3	fn050	1285.224334	1286.712663	1.488309	laugh
13	Bed015	chan3	fn050	3859.091521	3860.207753	1.116232	laugh
14	Bed015	chan3	fn050	3863.882015	3865.626127	1.744112	laugh

Parameter:

Threshold: 0.5

Min length: 0.2

4/6 -> 66% precision

4/6 -> 66% recall

Actual Laughter (me003)

23	Bed015	me003	975.810	977.348	1.538	laugh
28	Bed015	me003	1285.165	1287.467	2.302	laugh
34	Bed015	me003	1507.171	1508.685	1.514	laugh
35	Bed015	me003	1799.858	1800.703	0.845	laugh
37	Bed015	me003	1890.720	1891.574	0.854	laugh
38	Bed015	me003	2502.906	2503.676	0.770	laugh
40	Bed015	me003	2599.311	2600.105	0.794	laugh
43	Bed015	me003	2660.502	2661.341	0.839	laugh
47	Bed015	me003	3130.441	3131.313	0.872	laugh
49	Bed015	me003	3476.381	3477.630	1.249	laugh
60	Bed015	me003	3694.876	3696.920	2.044	laugh
65	Bed015	me003	3716.566	3717.963	1.397	laugh
69	Bed015	me003	3825.853	3826.710	0.857	laugh
72	Bed015	me003	3847.243	3848.670	1.427	laugh
76	Bed015	me003	3858.480	3861.140	2.660	laugh
80	Bed015	me003	3863.410	3869.740	6.330	laugh
83	Bed015	me003	3872.446	3874.118	1.672	laugh
85	Bed015	me003	3902.295	3903.645	1.350	laugh
87	Bed015	me003	3915.944	3917.789	1.845	laugh
92	Bed015	me003	3972.792	3974.393	1.601	laugh
97	Bed015	me003	4003.249	4004.486	1.237	laugh
100	Bed015	me003	4083.868	4084.926	1.058	laugh
103	Bed015	me003	4179.821	4181.510	1.689	laugh
105	Bed015	me003	4182.567	4183.498	0.931	laugh
106	Bed015	me003	4184.072	4185.040	0.968	laugh
111	Bed015	me003	4197.502	4198.988	1.486	laugh
113	Bed015	me003	4200.246	4201.892	1.646	laugh
114	Bed015	me003	4253.602	4254.507	0.905	laugh
115	Bed015	me003	4292.606	4293.980	1.374	laugh
121	Bed015	me003	4762.457	4763.383	0.926	laugh
124	Bed015	me003	4770.100	4772.162	2.062	laugh

MANHOB DB

"The MANHOB laughter database" - Petridis et al.

- 3 hand 49 min
 - 563 *laughter episodes*
 - 849 *speech utterances*
 - 51 *acted laughs*
 - 67 *speech-laughs*
- **PROBLEM WITH COMMERCIAL USE?!**
 - <https://mahnob-db.eu/laughter/media/doc/eula.pdf>

MANHOB DB - EULA

■ 1. Commercial use

The user may not use the database for any non-academic purpose. Non-academic purposes include, but are not limited to:

- *proving the efficiency of commercial systems*
- *training or testing of commercial systems*
- *using screenshots of subjects from the dataset in advertisements*
- *selling data from the dataset*
- *creating military applications*
- *developing governmental systems used in public spaces*

Next Steps

- Add auto detection if prediction lies within actual laughter interval
- Evaluate whole dataset with different parameters