

APPENDIX A

DATA SET RESOURCES

In this appendix we provide detailed lists of the different data sets used in this work. Many of source videos contain multiple scenes. Our own video clips are available on Google Drive via the following link https://drive.google.com/open?id=1Sm0FwgUgP_j1TNBIxzUi8Pr7TvIdiuh0.

Scene ID	Hyperlink	Contains leak?
Scene 1	https://www.youtube.com/watch?v=G7boBAAoQPA	N
Scene 2	https://www.youtube.com/watch?v=Xpsz0B67NAI	N
Scene 3	https://www.youtube.com/watch?v=YU-8pg_fFWQI	N
Scene 4	http://www.cantronics.com/images/stories/download/video/TR4700-Video-Bridge-Far-2010.avi	N
Scene 5	http://www.cantronics.com/images/stories/download/video/TR4700-Video-Bridge-Near-2010.avi	N
Scene 6	http://www.cantronics.com/images/stories/download/video/TR4700-Video-Road-Near-2010.avi	N
Scene 7	https://www.youtube.com/watch?v=yqz4-Neo0IY	Y
Scene 8	https://www.youtube.com/watch?v=Zumb-sTzgHY	Y
Scene 9	https://www.youtube.com/watch?v=GHXon3g2cAM	Y
Scene 10	https://www.youtube.com/watch?v=FqD41AODUyY	Y
Scene 11	https://www.youtube.com/watch?v=LPCte7Bn7Qw	Y
Scene 12	https://www.youtube.com/watch?v=D5FjEAYsvv8	Y
Scene 13	https://www.youtube.com/watch?v=S3Mzay6j1q4	Y

TABLE VIII: Hyperlinks of the videos from which we obtained temporal 1-D signals. Here, we used only one scene per video to extract temporal 1-D signals.

Video ID	Hyperlink	Contains leak?
Scene 1-4	https://www.youtube.com/watch?v=G7boBAAoQPA	No
Scene 5-7	https://www.youtube.com/watch?v=Xpsz0B67NAI	No
Scene 8-9	https://www.youtube.com/watch?v=YU-8pg_fFWQ	Yes
Scene 10-11	https://www.youtube.com/watch?v=GHXon3g2cAM	Yes
Scene 12	https://www.youtube.com/watch?v=FqD41AODUyY	Yes
Scene 13-15	https://www.youtube.com/watch?v=Sqg43EeBkY8	Yes
Scene 16-20	https://www.youtube.com/watch?v=YZlnV3o4TRk	Yes
Scene 21-24	https://www.youtube.com/watch?v=lcTPioWkeCc&t=149s	No
Scene 25	https://www.youtube.com/watch?v=4RVhik7eIzk	No
Scene 26	https://www.youtube.com/watch?v=5k8GORDmpog	No
Scene 27	https://www.youtube.com/watch?v=623iAfO8DQ	No
Scene 28	https://www.youtube.com/watch?v=p4Q2jBVxrPw	Yes
Scene 29	https://www.youtube.com/watch?v=UeN18sEPSK0	Yes
Scene 30	https://www.youtube.com/watch?v=QQZ9iPz7HCig	Yes
Scene 31	https://www.youtube.com/watch?v=BjOx0Cc7Z4	Yes
Scene 32	https://www.youtube.com/watch?v=9PDJAEWg3Ok	Yes

TABLE IX: Hyperlinks of the videos from which we extracted two datasets: Scene 1-20 are the data set used to establish the confidence score as in Table III. Scene 1-20 are also used as validation dataset for the spatio-temporal CNN as in Table V. Scene 21-32 are the test data set used in the joint evaluation of both 1-D and 2-D CNNs as in Table VI

Video ID	Hyperlink	Number of Scenes	Contains leak?
Video 1	https://www.youtube.com/watch?v=G7boBAAoQPA	15	No
Video 2	https://www.youtube.com/watch?v=Xpsz0B67NAI	5	No
Video 3	https://www.youtube.com/watch?v=YU-8pg_fFWQ	1	No
Video 4	https://www.youtube.com/watch?v=xsMMvLL0B_k	3	No
Video 5	https://www.youtube.com/watch?v=xsMMvLL0B_k	3	No
Video 6	https://www.youtube.com/watch?v=Sqg43EeBkY8	3	No
Video 7	http://www.cantronics.com/images/stories/download/video	1	No
Video 8	http://www.cantronics.com/images/stories/download/video	1	No
Video 9	http://www.cantronics.com/images/stories/download/video	1	No
Video 10	https://www.youtube.com/watch?v=yqz4-Neo0IY	1	Yes
Video 11	https://www.youtube.com/watch?v=Zumb-sTzgHY	1	Yes
Video 12	https://www.youtube.com/watch?v=GHXon3g2cAM	3	Yes
Video 13	https://www.youtube.com/watch?v=FqD41AODUyY	1	Yes
Video 14	https://www.youtube.com/watch?v=YZlnV3o4TRk	1	Yes
Video 15	https://www.youtube.com/watch?v=D5FjEAYsvv8	4	Yes
Video 16	https://www.youtube.com/watch?v=S3Mzay6jlq4	2	Yes
Video 17	https://www.youtube.com/watch?v=Z_4wa3UW-2o	2	Yes

TABLE X: Video links for the spatio-temporal training data set. There are a total of 33 scenes which contain no VOC-leak and 15 scenes which contain VOC leak. The scenes vary in length.